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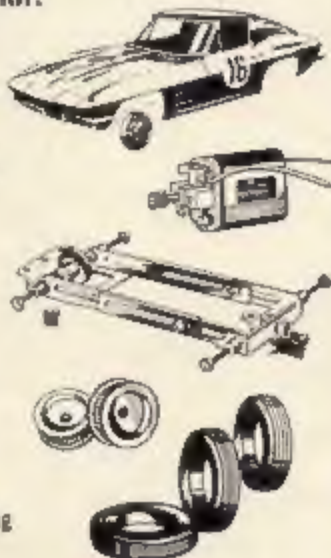


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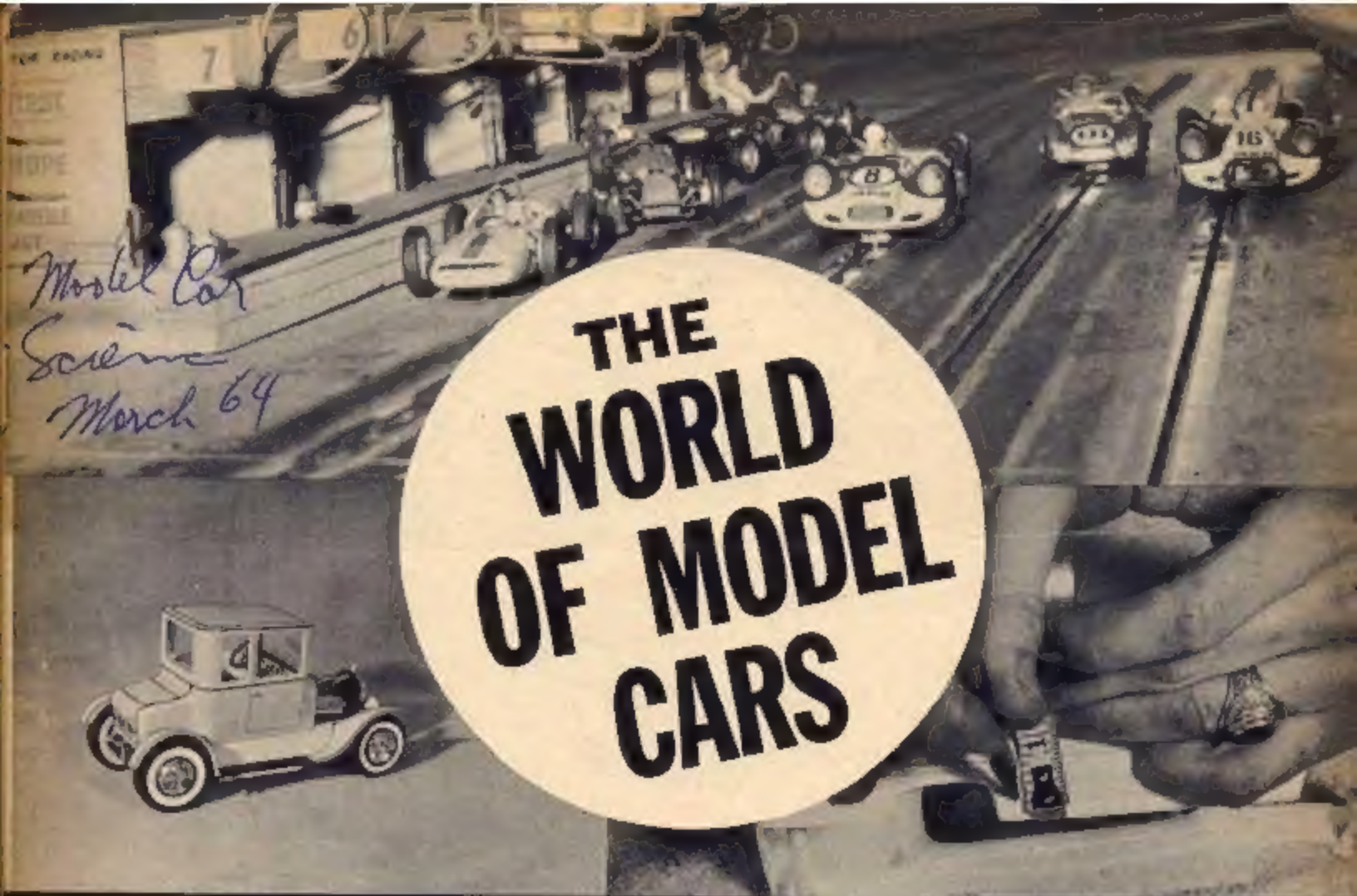
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*Model Car
Science
March 64*

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model car *Science*



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COVER—When the race pace gets in your blood, you won't be satisfied with the standard, drab track. True slot racing buffs can see a track come "alive" merely by the addition of some inexpensive track-side scenery. Several new ideas on building a personalized race course are offered MCS readers on page 54 of this issue. For the model customizer with an eye toward the future, the exclusive MCS Space Age T-Bird illustrated on page 12, offers something really new in dream car ideas.

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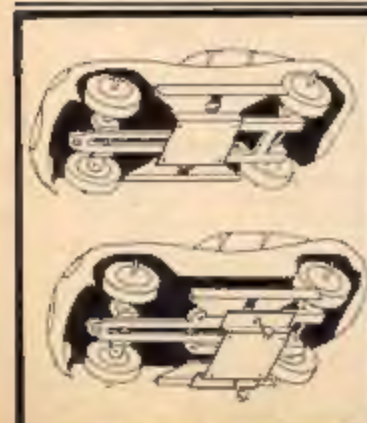
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MODEL MAIL

GRAIN OF WHEAT BULBS

In your October issue of M.C.S. you mentioned a "One grain of wheat, three volt light." I would like to have some information on where I could purchase some of these lights.

Lewis Lowell
Lincoln, Maine

Most up and coming hobby shops will carry grain of wheat bulbs. Strombecker has a light set for their slot racing cars, however they must operate on 12 volts. If you find neither available locally, drop a line to Auto World, Box 96-M-8 Scranton, Pa.

'58 IMPALA CONVERT

One kit that I am especially interested in is the 1958 Chevrolet Impala Convert. Do you know which company manufactures this kit?

M. Jacques Hebert
Montreal, P.Q.

As of now your hobby shop should have your '58 Impala in stock, however it is a two door hard top, not the convertible. With a little effort you can make a convertible out of it. It is manufactured by A.M.T., has opening doors and front wheel steering and contains a lot of customizing parts.

ALLISON ENGINE

Where could I get hold of an Allison engine, as you have on page 35 in M.C.S. #7?

David Schuchman
Chicago, Ill.

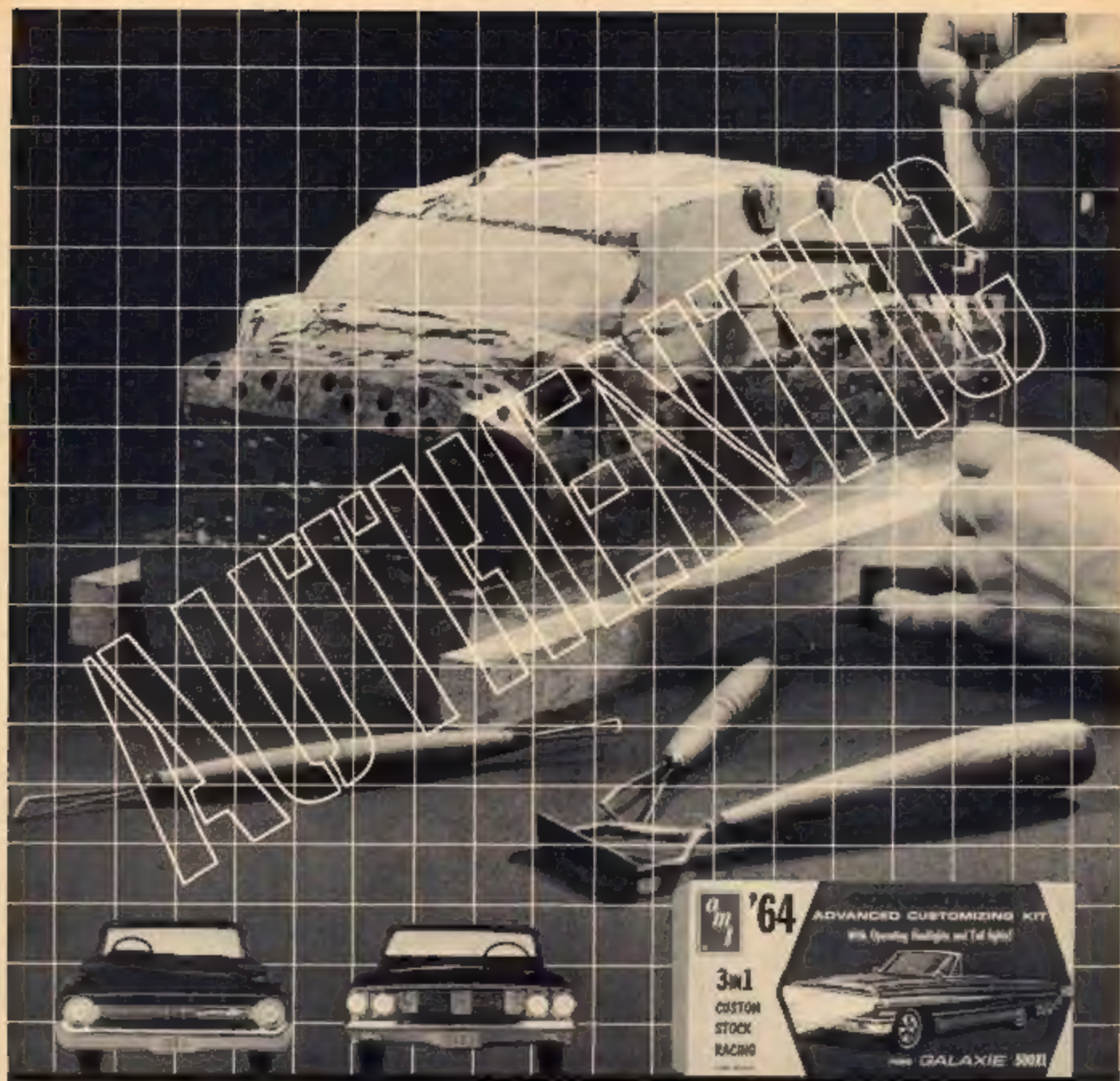
Your Allison engine is available as one of a half dozen or so hot rod kits manufactured by A.M.T., they are somewhat like the Revell group of custom car parts, however not as extensive.

WHERE TO HIDE THE AXLE?

On earlier cars in the '30's and '40's I have noticed that when putting the metal axle through the front suspension that the axle shows through, this sometimes ruins the appearance of a custom and might take points off in a contest. Is there any way to hide the axle?

Carl Berghvist
Swarthmore, Pa.

Without sacrificing the strength of your front end assembly, your best bet is to bend the metal axle to follow the contour established by the plastic part. An alternate method would be to install short stub axles as now used on Revell models.



This man's a model maker. He works from engineering blueprints. Blueprints of the real thing. Prints provided by automobile manufacturers, customizing consultants and speed equipment specialists. The people who know! The large scale model he makes is the basis for the 1/25 scale production dies. Dies so complex they cost tens of thousands of dollars. Dies that form the parts that go into AMT 3-in-1 Customizing Kits. Parts like operating doors, hoods, lights, and steering. Parts that make AMT 1/25th scale models *authentic*. That's your guarantee with every 3-in-1 Customizing Kit from AMT. It's *Authentic!* The best there is. (For a closer view of the authentic '64 convertibles from AMT, write today for your FREE catalog.)



FROM THE KATS AT KIT CITY

AMT CORPORATION BOX 55 TROY, MICHIGAN



TRACK TALK

BY BILL SIPPEL

REVIEWING SLOT RACING developments during the past year, we sadly note that there is still really nothing really new. Despite this situation, however, total hobby industry sales for 1963 were at the one hundred million dollar mark, and this can't be called pin money.

Looking at publications, there are now double the number of publications of the previous year on the market that deal with electric racing. MCS, although not the first to enter the field, within a very short time became the largest, most widely read. Being a free lance writer, and not a member of the magazine staff, I can say they are a great group, trying to bring you an authoritative publication. Each month you hear me knock or praise items and express ideas as I see

the situations through my eyes. MCS has been very kind to allow this. I have stepped on a foot now and again, but your letters have shown your approval. My thanks to both you and MCS.

There are a few new things now being tried in England that are not too common here. Due to the lack of space, many British enthusiasts think small. We now see them motorizing various bodies of shelf displays, not as small as HO. There are many manufacturers in Europe that today produce very fine metal and plastic cars in the area of 1/40 to 1/43 scales. The fun is in jamming in as much motor as possible, four wheel drive, and what have you, then comes the racing. In most cases GP cars are not too common and sports, station wagons, sedans and the like take over. The overweight factor of the car bodies takes care of itself, since all have the same disadvantage.

Now I want to air a pet gripe held by most enthusiasts, myself included: *exaggerated scale claims!* Bodies are most misrepresented in this respect. Body manufacturers in most cases do not try to follow scale but are usually quick to claim the scale to make the sale. Persons not armed with rulers and precision measurements can easily get hung out to dry when selecting a new body. Wouldn't it teach a lesson to everyone producing in this way to have their products returned for refund on the basis of misrepresentation? I have seen piles of bodies purchased by fellows who later found them to be grossly out of the advertised scale. Any manufacturer listening: there is a market for real, not advertised scale.

Bob Camp, an ardent racer, has taken a couple pin ball machines and to date, with the parts from these machines, has built three 4-lane lap counters, two hill-climb current reversing switches, and a drag — ready countdown — Go-foul and pick the winner unit. After all this, he still has a fair pile of parts left over. I'm working on him now to do a bit for MCS in the near future on how he did it.

I recently discovered a set from Japan with Scalextric track selling for \$8.00 including two cars, controllers and fence. Scalextric price range would retail at \$27.00 for the track alone, quite a difference!

Our proposed thoughts about smaller drag cars and tracks are really showing signs of life. We stated strip lengths to work in the 1/32 scale range, but to be realistic, and use the available plastic kits, it can only be claimed "scale-like" rather than scale. A quick check would show very few cars actually 1/32 scale, but they are close enough to be compatible for the most part. There are two main reasons why you can be liberal. First, you are not duplicating an actual prototype car as in GP and sports road racing. The other factor is that most kits not 1/32 scale are actually smaller, so no advantage is gained in the respect of motor space. I still contend that the best way to maintain good, clean drags is by group control. If cars start to grow so they look like giants, just say so. By making all cars maintain scale realism and having actual maximums for tire diameter, width, track or body width, you will have everything under control for the most part.

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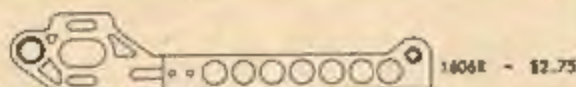
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m.p.h. and more, thanks to Strombecker's rugged 12-volt motors. Better check these two winners at your Strombecker dealer today—only \$3.95 in Custom Kits, \$5.95 built-up and rarin' to go!

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SPACE AGE T BIRD



This exclusive MCS dream car is designed to put any contest judge into orbit!

Here's another exclusive MCS Dream Car to challenge your design and building capabilities.

Basic components are AMT '57 T-Bird kit, stylized front and rear pieces from AMT '57 Chevy. Resell bubble and bubble skirts.



THE SPACE AGE is upon us, bringing with it many new futuristic designs. Realizing this fact, many customizers and car designers have prepared dream cars for car shows and even the New York World's Fair. Examples of this are Ford's Twister dragster covered in this issue. Chrysler's new limited production turbine model is another. Mystery and Starbirds "Futurista" are but a couple of additional examples of some of the customizer's ideas in dream cars.

Basic parts for this car include AMT's '57 "T" Bird kit, stylized front and rear pieces from AMT '57 Chevy kit. Resell's large bubble top, two bubble fender skirts made into fins and plenty of putty.

First on agenda is removal of all side louvers, door handles, names and emblems by filing and sanding. "T" Bird fins are completely removed. All door lines, vent lines, trunk lines, and body indentations are filled with body putty. More than one application will be needed. Sand between each application with

#320 wet-or-dry sandpaper. Be sure to use plenty of putty on each application to allow for shrinkage. Sand front fenders to remove peak, work area until fenders are round. Make sure body is smooth and no body lines are showing. For finish sanding use #400 wet-or-dry sandpaper.

From outer edge of front fender (on each side) measure in $9/16$ inch and mark with grease pencil. Area is filed flush with headlight mounting edge. This is done to allow stylized front piece

from '57 Chevy to fit flush. File back end of Bird until file is flush with trunk lid, this is done to aid in fitting rear stylized piece from AMT '57 Chevy.

Body is now ready for fitting of bubble top which is placed on center of front cowl edge. Be sure bubble is centered. With grease pencil, trace around bubble. Cut out marked area with a razor saw. Cowling is larger than bubble so putty will have to be used to build up area around outside of bubble. Let putty dry and sand level with top of

body. Bubble is again positioned for check, mark is drawn around outside of bubble, putty is sanded to this line. This operation may have to be repeated several times to achieve a perfect border for bubble to sit on. Body is now ready for addition of stylized parts from '57 Chevy kit.

Stylized pieces must be modified for a perfect fit. File down the back of the stylized headlamp piece until area is flush with back of headlight section. On area below headlights, measure in $1/4$



SIDE LOUVERS HANDLES NAME AND EMBLEMS ARE REMOVED



BODY SHOWN HERE HAS BEEN PLANED OFF

MEASURE $9/16$ INCH BACK FROM EDGE OF FRONT FENDER MARK WITH GREASE PENCIL.



AREA IS FILED FLUSH WITH HEADLIGHT MOUNTING EDGE



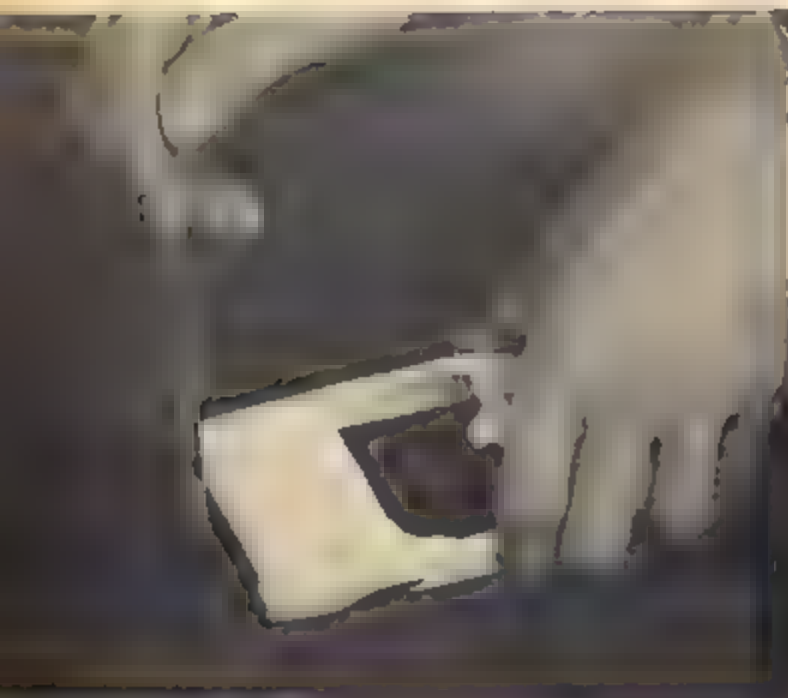
inch on both sides, mark with grease pencil. This is cut off and discarded. Glue stylized Chevy piece to front of

Now real work begins, area between stylized piece and front of Bird will have to be filled either with scrap plastic and putty or putty alone. Time and patience

are required for this part of the job as many applications of putty, filing, and sanding will have to be done until body pieces flow together smoothly.

Now we are ready to work on rear end. Trunk lid is cut out of molded Chevy taillight and grille assembly. File away all excess plastic from rear stylized

piece, file area until file is flush with back of grille moulding. Rear end grille will have to be sectioned to fit. Locate center, mark, measure $\frac{1}{8}$ inch on each side of mark, cut out this quarter inch section, re-glue grille together. A half inch is removed from top of fin to allow peak to come just to top of fender



FILE REAR END OF 'BIRD FLUSH WITH TRUNK LID

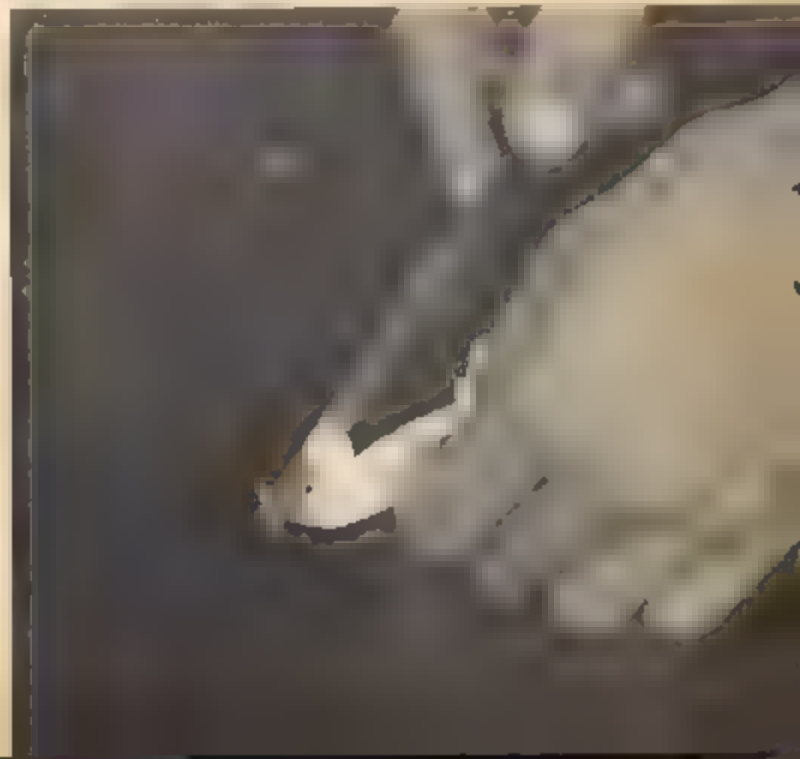


WITH GREASE PENCIL, TRACE AROUND BUBBLE, THEN CUT OUT AREA WITH A RAZOR SAW

FILE BACK OF STYLIZED HEADLIGHT PIECE UNTIL AREA IS FLUSH WITH BACK OF HEADLAMP SECTION



QUARTER-INCH AREA BELOW HEADLIGHTS IS CUT WITH RAZOR SAW AND DISCARDED



when glued in place on the Bird. Glue stylized piece in place on car. Many putty applications will be needed to flow the two body pieces smoothly together.

After stylized parts have been smoothly molded in, we are ready to build fins. Builder is free to design his own fins or use two bubble fender skirts. Cut a di-

agonal line from tip of skirt to bottom. After piece is cut it should look roughly like a triangle. Glue fin to body, putty and work this area until desired contour is achieved. Again it will take a great deal of time and many putty applications. Check all body modifications for flaws such as cracking, pitting, or

hollows. Especially check fins where they attach to body for cracks.

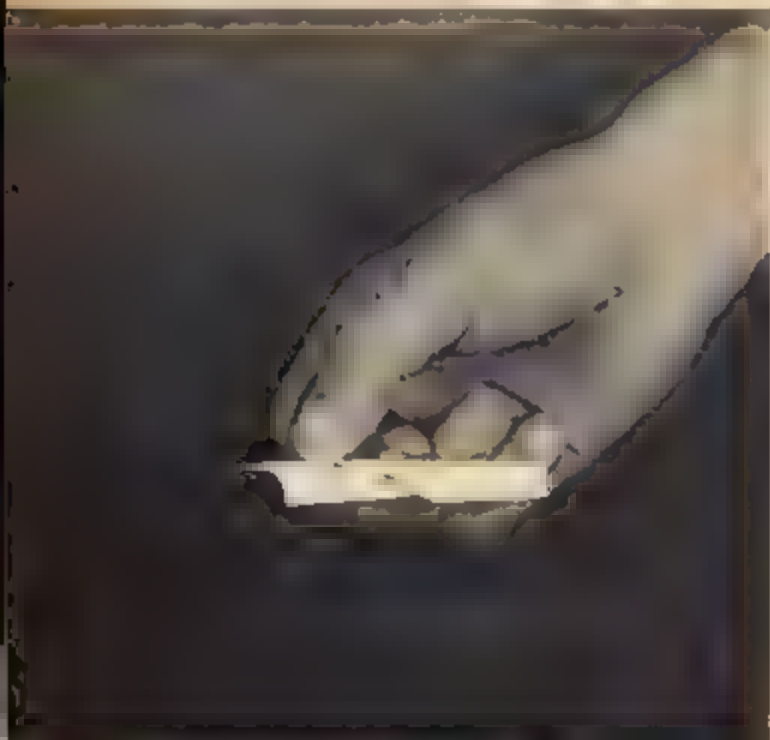
"T" Bird interior can be used with slight modifications, or builder may wish to design his own special interior. Tail lights, front and rear grilles are left to builder's discretion. The '57 Bird undercarriage is retained.



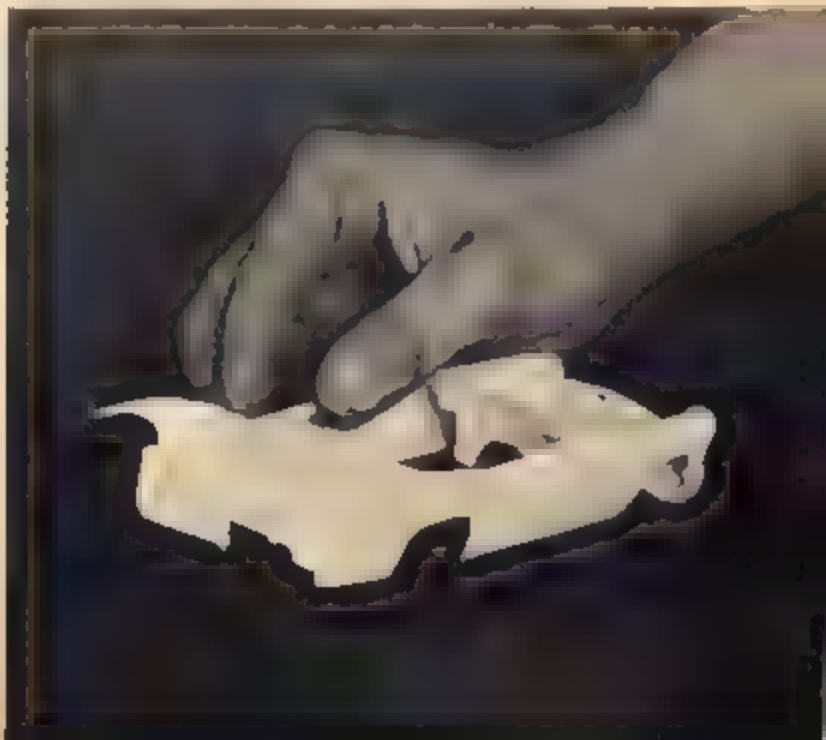
TRUNK LID IS CUT OUT OF MOLDED CHEVY TAIL LIGHT AND GRILLE ASSEMBLY



QUARTER INCH SECTION IS REMOVED FROM GRILLE PIECE



CUT A DIAGONAL LINE FROM TIP OF SKIRT TO BOTTOM

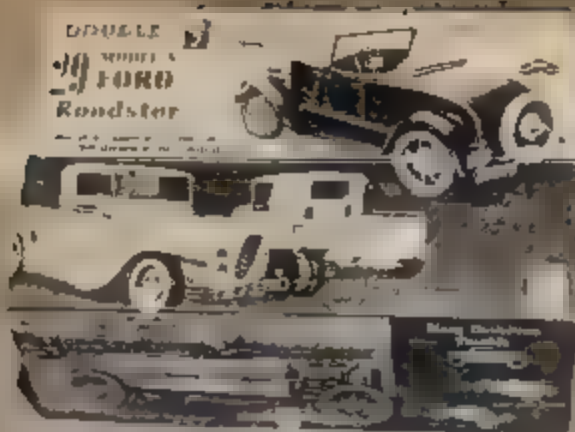


GLUE FIN TO BODY PUTTY AND WORK AREA UNTIL DESIRED CONTOUR IS ACHIEVED

TRY A MOLDED IN ROADSTER

Hot Rodders Everywhere
Recognize This Sweet Chariot
As A Drag Champ . . . Here's
How You Can Build The Model





The basis for building this drag roadster is AMT's '29 "A" Ford kit.

By Bob Wagner

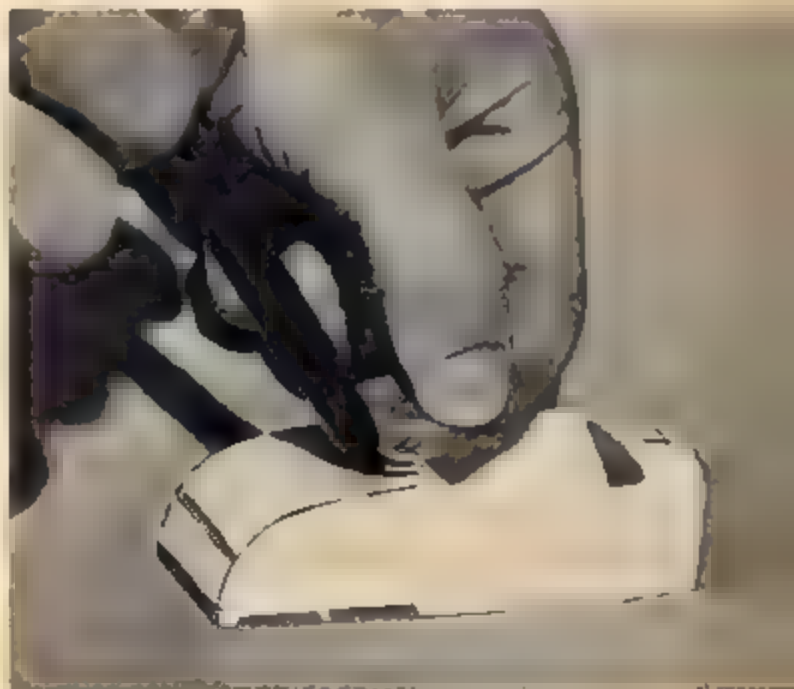
It is now evident that the streamlined and aerodynamically designed cars are the ones winning races. Simple things like door handles, body chrome, and unneeded cockpit space can all be removed and filled. Air turbulence will also slow a car down. Extremes in these designs are the full bodied rail jobs. These bodies are first tested in wind tunnels as models. After the body design has been proven in the wind test, the full scale body is constructed. These bodies, mild and radical, are useful and yet very smooth looking.

Basic components for this molded-in drag roadster come from the AMT '29 "A" kit. Use the body, fenders, hood, grille, shell, frame, and rear end. Starting with the body fill all seams and body lines, door, and trunk lines. Putty in these spots and sand smooth. A second putty application may be needed. Prime body to see if these lines have been filled properly. This roadster has a deep engine set-back. The driver cockpit must be set back also. With a 25¢ piece placed half over cockpit side and rear deck, mark or scribe around this on deck with grease pencil. By using a jeweler's saw, cut this circle out roughly and then finish by filing smooth. Blower room will need to be cut. Cut a square 3/8" by 3/8" from cockpit side with X-acto razor saw. File this area smooth. Cockpit cover can be built as a tarp or be molded in. It makes no difference when making this piece and you can decide later. First locate a piece of scrap plastic of 7/8" by 2," this piece is larger than needed. Spare plastic can be found in many kits. Parts that can be used are tarps out of pick-up kits. Kemtron has an assortment of plastics starting at \$1.20. By using the full scale diagram, trace this on plastic and cut out. A slight bend is required at cockpit entrance. Using a match or candle, heat the rear of this piece, (do not heat excessively) and bend with finger until this piece fits body tightly. Now decide whether it will be molded-in or not. If this piece is used as a tarp, file the edges round and sand and paint flat white or black. If it is molded-in, glue it to body and let dry. After dry, putty is with a good putty, only a small amount should be needed. After all body work is completed, prepare for paint with #400 wet and dry sandpaper.

Taking the Model "A" hood, file top hinge, louvers, and fasteners. Louvers will take a lot of filing to be removed. Fill with putty and sand where needed. Fenders have bumper and headlight mounting brackets filed and mounting holes filled. Step-plate on rear right fender should be shaved off. Floor



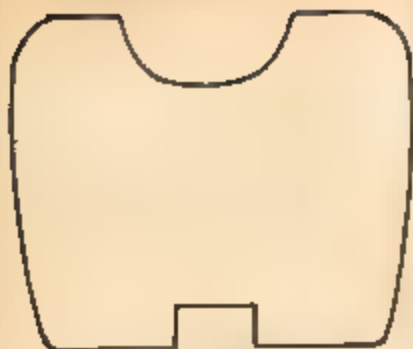
Body seams, door and deck lines are marked where necessary, filed and puttied in.



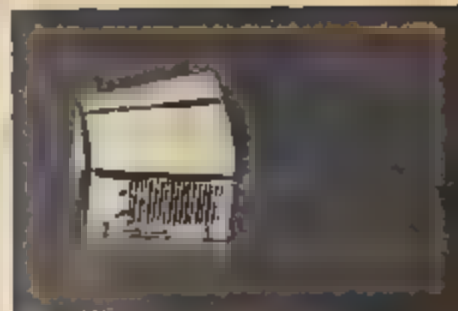
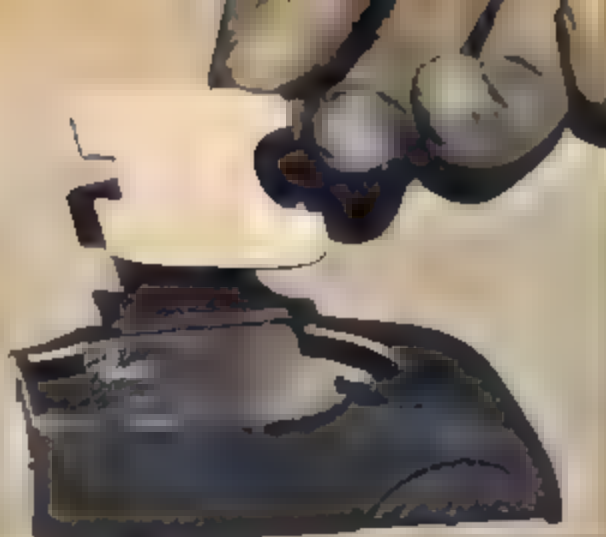
Driver's cockpit is started by placing a 25¢ piece over rear of the cockpit and drawing a half circle. This can be cut with a jeweler's saw and filed smooth.



Marked area is for blower. The piece to be cut is 3/8" wide and 3/8" long.



Cockpit cover is fitted on body.
Copy full scale drawing.
Cockpit cover is to be traced on
scrap plastic and cut out.



File all hood louvers and top
hinge. Be sure these lines
are completely filed out or
they might show through
when painted.



Bumper brackets, headlight
mounting brackets, and step
plate are to be filed and
sanded smooth. Marked floor
board is cut out.

Finished fenders are put in
primer condition after putty-
ing and sanding.

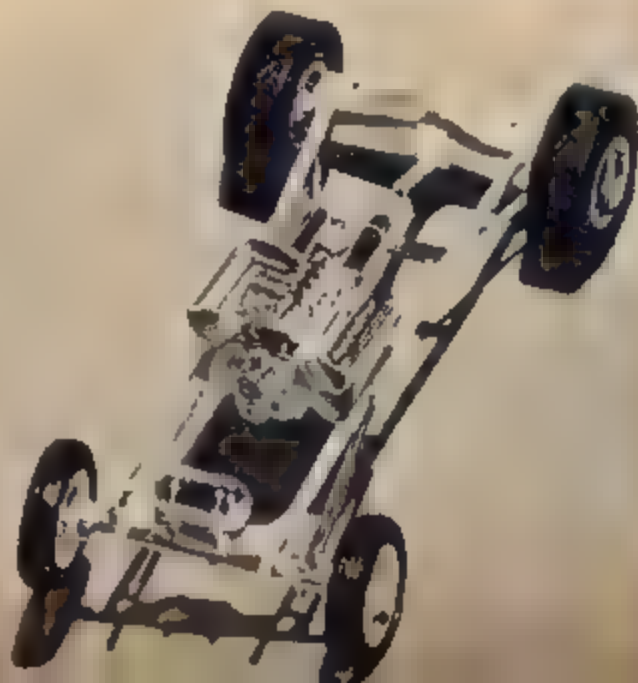


The '29 "A" frame has crossmem-
ber, battery, and steering brackets
cut off with razor saw and
filed smooth.



Here is frame in finished condition with drive shaft
cut off. Tires and wheels are AMT's. Front axle
is from either AMT's Dragster Kit or
Revell's Orange Crate.

FRAME IS SHOWN WITH ENGINE AND
DRIVE SHAFT IN PLACE.





Car is ready for cockpit cover to be molded in or can be left detachable to resemble a tarp.



With pin vice, drill a small hole (a little larger than straight pin) 1/32" above front crossmember on each side of fenders. Then place pin through holes and bend sharp end so pin doesn't come out.



Glue grill on top of pin. After dry, push forward to see if hood hinge works smoothly.

Here is an example of a full bodied dragster by Tony Nancy. Note how smooth the lines are carried from the nose to rear end.



board under cockpit is to be cut out for transmission and rear of engine. After fender work is finished, prime and prepare for paint. Model "A" frame has second crossmember, battery, and steering brackets cut off and all this area filed and sanded smooth. Cut drive shaft from '29 "A" rear end and glue with rear spring in normal position. Tires and wheels used here are from AMT's custom competition tires and wheel kit. Front axle and spring are used out of AMT's 3 in 1 Dragster kit or the Revell Orange Crate front axle can be used.

Engine used here is AMT's blown Chrysler. Motor mounts can be made from chrome stock cut 3/8" long. To find engine placement, fit fenders over frame. With pencil or sharp tool, mark the spot where edge of fender ends that holds up hood. This is where motor mounts are glued on an angle. Mounts should be glued to engine where cylinders angle up at front. A brace can be placed under transmission. A drive shaft can be used from the chrome rear end out of AMT's Dragster Kit or chrome stock cut to fit. Headers are from Revell's Orange Crate kit. Motor mount will be between the first and second pipe on both sides. Rollbar, seat, steering and pedals are out of Revell's Orange Crate kit.

On competition roadsters, engines are in such a position that the body is made removable to do engine work. On some cars the hood is hinged at the front to give even more working room. Parts and tools needed to hinge hood are a straight pin, pin vice, and drill a little larger than pin, and file. First glue chrome grille shell to hood. File bottom of grille shell flat and front crossmember of fenders flat. With pin vice, drill a hole through side of fenders 1/32" above crossmember on each side. Place pin through holes. Pin is just long enough to go through. Bend the sharp end of the pin flat so pin will revolve and not come out. Place grille shell with hood in place and glue pin to grille shell. Wait till dry, (about 3 hours) then push hood forward and you should have the roadster completed with hinged hood and all.

If after building a drag roadster one can build a molded-in street roadster with or without fenders. Basically the work is the same except do not change the cockpit and engine location. These should be left normal. If one builds a roadster without fenders an idea would be to channel the body deeply over the frame. Either version, strip or street, is a real eye catcher.

MCS

CONTEST WINNERS



FIRST PRIZE AND \$25 SAVINGS BOND TO ELLOTT ANDREWS OF BOSTON FOR HIS CREATIVE TALENTS ON THE '62 TEMPEST



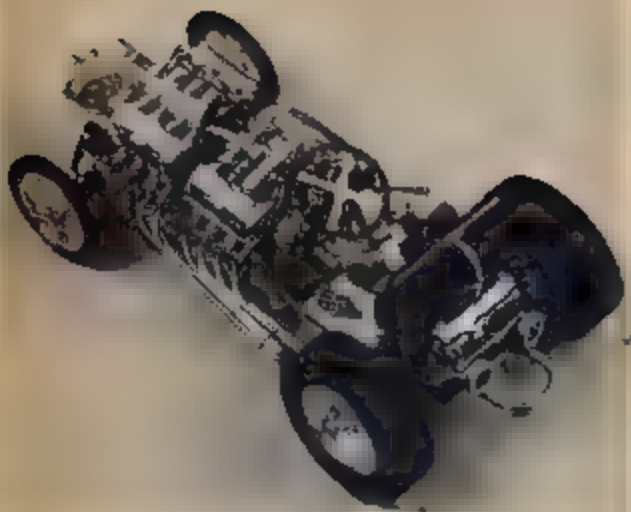
Matthew Sweeney, North Hollywood, Calif., finished second with his drag crew truck that started as an AMT '53 Ford pickup.



The "Wild Kat" built by 16 year old Robert Ford, has a chopped, channeled and sectioned body, and a hand-made crash bar covered with screening. A twin-carbed Chrysler is under the hood.

LOWERED BY HORIZONTAL SECTIONING, AND THE ADDITION OF COMPACT TIRES AND WHEELS, THIS CUSTOMIZED '57 BERD WAS BUILT BY THOMAS C. ERYENAK OF WOODBRIDGE, N.J. FINISH IS A DEEP CANDY PURPLE.





It took more than two years for Dan J. Morett to complete this completely wired and upholstered model. To date, it has won five first place trophies.

Michael Georgeff, a member of the Kustom Kings model club in New Hamburg, Ontario, Canada shows what can be done with a '32 Ford Victoria.



Stan Bille from Lodgepole, Nebraska, created this chopped '32 Ford that features a white corduroy interior and running boards. Engine is a blown Chrysler, wired.



Kent Wallace of Orapo, Maryland, used wine colored velvet to cover the interior of his fire engine red Vette.



This combination Grand Prix race car and dragster was designed and built by Sheldon Cousins in Toledo, Ohio. Body is a '62 Chevy II Nova convert. Engine is Revell's '63 Sting Ray.

a MODEL CAR SCIENCE Contest

FOR MODELERS
EVERYWHERE



Each month the editors of MCS will select from PHOTOS submitted, the top model car. It will be shown on these pages and its owner will receive a \$25 U.S. SAVING\$ BOND.

SEND A PHOTO OF YOUR PRIZE MODEL TODAY TO:



MODEL CAR SCIENCE

Contest Editor

171 So. Barrington Pl.

Los Angeles 49, Calif.

You may submit as many entries as you wish. Send photos only, please. NO R.T.S. Include your name, address, age and information on how you built the model. Only CAR models are eligible. We cannot return any photos submitted.



#2: You must choose between cars and her.

THREE ECTIC DAYS, there's just nothing better than a brisk psychological test to help you morbidly investigate your own personality. For example, you may have suffered many a sleepless night, wondering exactly *how* you would measure up to unexpected pressure and asking yourself all kinds of leading questions, such as: In A Boy's Best Friend His Newest Model Kit? Do I Tend To Wig At The Drop Of An X-Acto-knife? Am I Some Kind Of A Nut? Should I Be More Individualistic And Switch To 1/1000th Scale? What'll I Do With All Those Leftover Model Car Parts My Stupid Cousin Stepped On? The following self-test will probably answer your ruthless questions unless you're only willing to settle for facts.

You will notice that below each real-life situation there are several choices, including a blank line for you to write in your own reaction to the situation in case none of the other dumb solutions happen to appeal to you. At the end of this quiz you will find a scoring-system carefully calculated to increase your confusion. Take your time. Think carefully. Cheat wisely. The answer you select may not mean a stunkin' thing and *that's* why you are fooling around with this gig so lolsa-uck.

Like GO!

- (1) Coming out of a model shop you encounter a friend who — seeing the stack of model car cartons you're lugging — begins hooting derisively and making fun of you for playing with them little cars.
Would you
A. Hit him in the mouth?
B. Ignore him?
C. Go back into the shop and hide?
D. Break his yo-yo string?
E. _____
- (2) Your girlfriend insists you're spending more time building model cars than you are paying attention to her and she says you must choose between the cars and her.
Would you ...
A. Ask to meet her cute sister?

MODEL CAR KWIZ

By Carl Kohler

- B. Give up modelmaking?
- C. Hit her in the mouth?
- D. Borrow the price of another car kit from her?
- E. _____
- (3) You invite some guys over to admire your huge collection of model cars and, after they leave, you discover several choice cars are missing.
Would you
A. Flip?
B. Write the FBI?
C. Hit yourself in the mouth?
D. Calmly begin rebuilding the missing cars?
E. _____

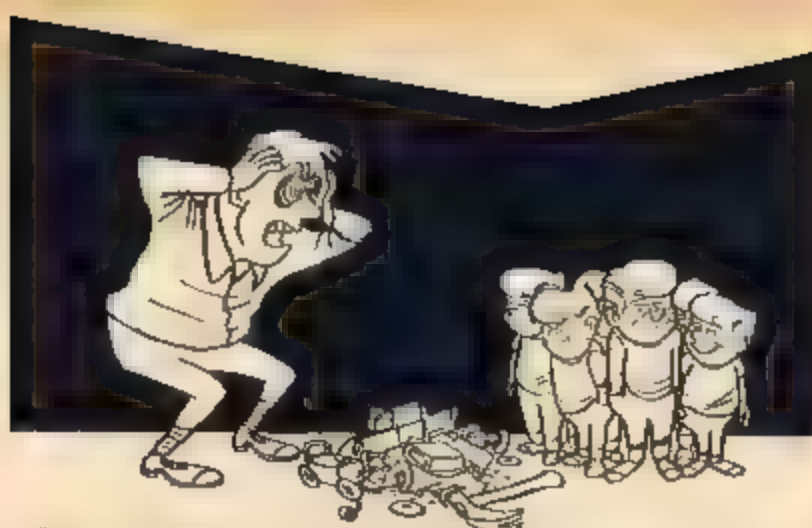


#1: He begins hooting derisively and making fun of you for 'playing with them little cars.'

- (4) You're exhibiting some of your best model cars at a model show when the guy setting up his display near yours, accidentally knocks your top entry to the floor — ruining it.
Would you
A. Forgive him?
B. Pinch his head off right there in public?
C. Wait 'til later?
D. Stamp your foot _____ on his whole display?
E. _____
- (5) While trimming a particularly difficult section of a chassis, you carelessly slice your thumb with the knife you're using.
Would you
A. Bleed?
B. Start hunting for a bandaid?
C. Talk real dirty to yourself?
D. Call an ambulance?
E. _____
- (6) A creep you know shows you his latest triumph and it's undeniably the most swinging model car you've ever seen — better than anything you've ever built.
Would you
A. Praise it?
B. Spit on it?
C. Pretend you've gone blind?
D. Hate yourself?
E. _____
- (7) Mildly bored with building ordinary model cars and hoping to gain widespread recognition, you cleverly design and construct a 1/25th scale golf-cart ... which doesn't impress anybody.



#3: After they leave, you discover several choice cars are missing.



#4: Your kid brother and his destructive little buddies have been playing there.

- B. Flinch?
- C. Sell the whole group to the gypsies?
- D. Come unglued?
- E.

(10) *Having been duly elected president of a model car club, you discover you're responsible for just about all the crummy chores nobody else wanted*

Would you

- A. Act like a rowdy, hoping for impeachment?
- B. Courageously resign yourself to



#11 You suddenly spot a terrible misprint in the plans you followed so faithfully.

Would you

- A. Cry?
- B. Hit everybody in the mouth?
- C. Modify it to a scale hearse?
- D. Sullenly destroy it?
- E.

(8) *Attending a model car show, you accidentally step on another enthusiast's show-model — reducing it to a handful of gleaming rubble*

Would you

- A. Whip out your glasses and put them on?
- B. Apologize profusely?
- C. Cringe fearfully?
- D. Laugh it up?
- E.

(9) *You walk into your workroom only to discover your kid brother and his destructive little buddies have been playing there — demolishing every car you own and breaking all your custom-made tools.*

Would you

- A. Shrug philosophically?



#5: You carelessly slice your thumb.

the chores?

- C. Swear?
- D. Plan to get even with graft?
- E.

(11) *You've almost completed building the most complicated model car in your entire experience when you suddenly spot a terrible misprint in the plans you followed so faithfully — thereby making every bit of the car's construction totally erroneous.*

Would you

- A. Seriously consider hitting the manufacturer in the mouth?
- B. Pretend you hit it that way on purpose?
- C. Get fitted for glasses?
- D. Sulk?
- E.

(12) *You've successfully built customized versions of every car known*



#6: Undeniably the most swing model car you've ever seen — better than anything you've ever built.



#8: You accidentally step on another enthusiast's show-model.

to model-dom and all of them have won First Prize at model shows everywhere, and to top this, all the manufacturers of model car kits have given you lifetime supplies of their products plus the assurance of free samples of all their future kits — and, then, you wake up from this gorgeous dream.

Would you

- A. Go back to sleep?
- B. Go back to sleep?
- C. Go back to sleep?
- D. Take a sleeping tablet?
- E.

Wan't that easy?

Here, now, is the scientific scoring system as determined by assorted model building experts, none of whom ever constructed a scoring-system before. Don't be elated or depressed by your score. Instead, get your friends to take this stupid test and make fun of their scores.

1-D, 2-A, 3-C, 4-B, 5-A, 6-D, 7-D, 8-B, 9-C, 10-B, 11-D, 12-ABCD & E. If your score matches these choices you're a guy who spends a lot of time messing around with model cars. If your score comes out any differently, you're not buying enough model cars. And if you wrote in all your answers, you wasted a lot of time that could've been devoted to working on a model car . . . and SHAME on YOU!

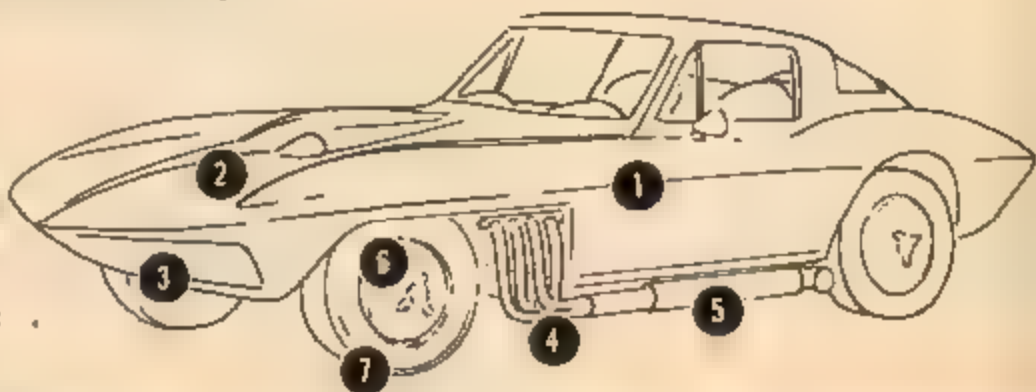
GREAT CUSTOMS ... AND HOW TO



Start this smart car by filing hook grilles, exhaust outlets and rear bumper mounting holes & taillights. Flatten front of body to provide gluing surface for extended nose remove parking lights. build up extended nose of scrap sheet stock. Center raised peak in hood must be altered in two ways. add material to rear 2/3rds for additional height to form hood blister. Forward of this, file sides of peak to reduce width to match inboard sides of blister opening. A 1:32 scale slot racing Asteroid can be made by using the Revell Vette body, wheel inserts from their Jag XK E, and side pipes from Revell's '60 Dragster exhaust tubes.

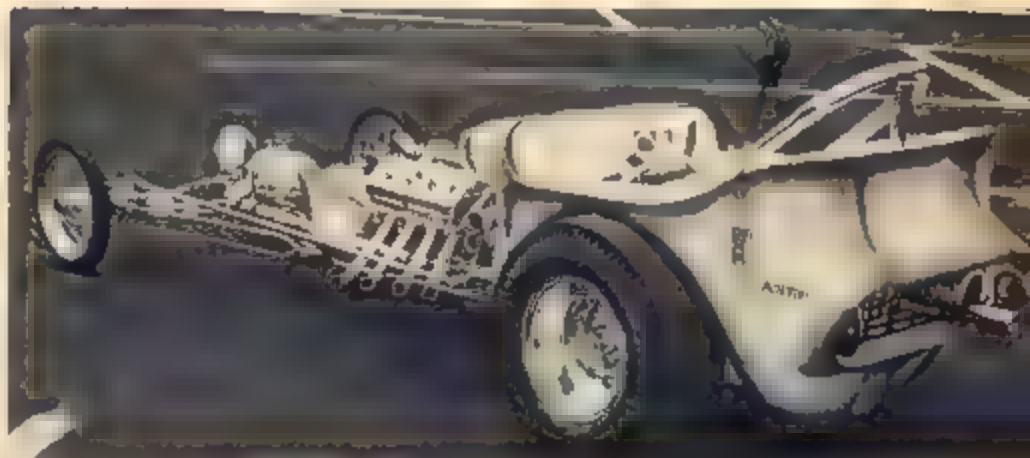
THE ASTEROID

1. Body — AMT '63 Sting Ray
2. Engine — Revell's custom Corvette (use intake manifold from Revell '57 Chev.).
3. Grille Bars — Make from Revell Outlaw front radius rods
4. Tubes — Revell Drag Boat or AMT '25 T
5. Chrome — Runner stock or cut from Revell tube frame
6. Street Wheels — Revell XK-E Jag
7. Royal Master Tires — Revell Custom Car Parts.



and HOT RODS BUILD THE MODELS

Designed and built by Carl Casper of Flint, Michigan, the "Undertaker" features a T-bucket body with sculptured back. A sweepstakes winner in competition class at shows, it also has headlights installed for night draggin'. Its Chrysler engine has a GMC blower fuel injection, and has been completely chrome-plated. To copy this famous rod, start with the Revell Outlaw body, cut down sides in door area to raise cowl. Form fairing around lights from most any AMT or Revell headlights, using scrap plastic & body putty.



THE UNDERTAKER



1. Body — Revell's Outlaw
2. Engine — Revell Chrysler
3. Grille — Bumpers from Revell metalflake cars
4. Blower induction tubes & manifold — Revell 283 Chev engine kit
5. Fuel Tank — Revell Attempt.
6. Frame — Custom built from Revell tube frame kit.
7. Wheels & Tires — Revell Custom Car Parts.



DOUBLE THREAT VETTE

**MCS Customizers Say
Two Corvette Bodies
Are Better Than One**



V-1. Comparing bodies which are marked and ready to be cut. The top body (which is shortest) will be used as the rear of the car.



Double threat vette is an attempt to take a simple design and rework and proportion it into a futuristic dream car.

Construction begins with two AMT Corvette Sting Ray fastbacks, or roadster bodies can be used. If roadster bodies are used, headlight doors will have to be glued and put-tied in place. When marking the lines to be cut on the body, be sure they are straight. One of the bodies is marked and cut with razor saw 3/16 inch in back of door line. Coupe body top is removed at this time.

With the second body mark and cut vertically in front of the door handle on both sides. Discard the rear portion of body and tops from both cars. Put together and check for alignment but do not glue. If they need to be recut or filed for alignment do so now. Glue bodies together and hold them until they set-up, leave alone for at least eight hours. After this is completely dry remove turn signal housing, head-lights, door handles, and all body chrome by filing and sanding until cherry. Fill all holes, body lines, and completely putty in sides.

Now a choice should be made as to which type of bubble is going to be used. Revell includes two bubbles in their taillight kit, or you can have a bubble made at a plastic shop. Another bubble that can be used is in Revell's Beatnik Bandit kit. This bubble is almost made to fit. By using canopy frame #85 as ridge, mold this to body. Molding canopy frame will be easier than building up a ridge with putty.

Interior can be adapted from this kit also with slight modification. These spots will take a great deal of putty. Here is a list of putties that can be used for filling: red oxide Speed Glaze, Green Stuff made by Rinsched-Mason, Duratite Surfacing Putty, or AMT body putty. Speed Glaze and Green Stuff can be obtained at hardware stores and hobby shops. When applying putty: use an excess amount to allow for shrink-age. Take shortest body for rear and glue hood in place, then completely fill in with body putty. The front hood should have scoops filled in with putty. Several applications will be required. Sand with #320 wet and dry sand paper and as a preparation for paint, sand with #400.

At this time file lips from both front and rear grill cavities. Front grille is made from the floating grille found in Corvette kit. The lights are quads found in '63 Ford Hardtop.



V-2. BE SURE SIDES ARE ALIGNED PROPERLY WHEN THEY ARE SET UP TO DRY

V-3 Body now has sides completely filled in and rear hood glued in place ready to be completely puttied in.

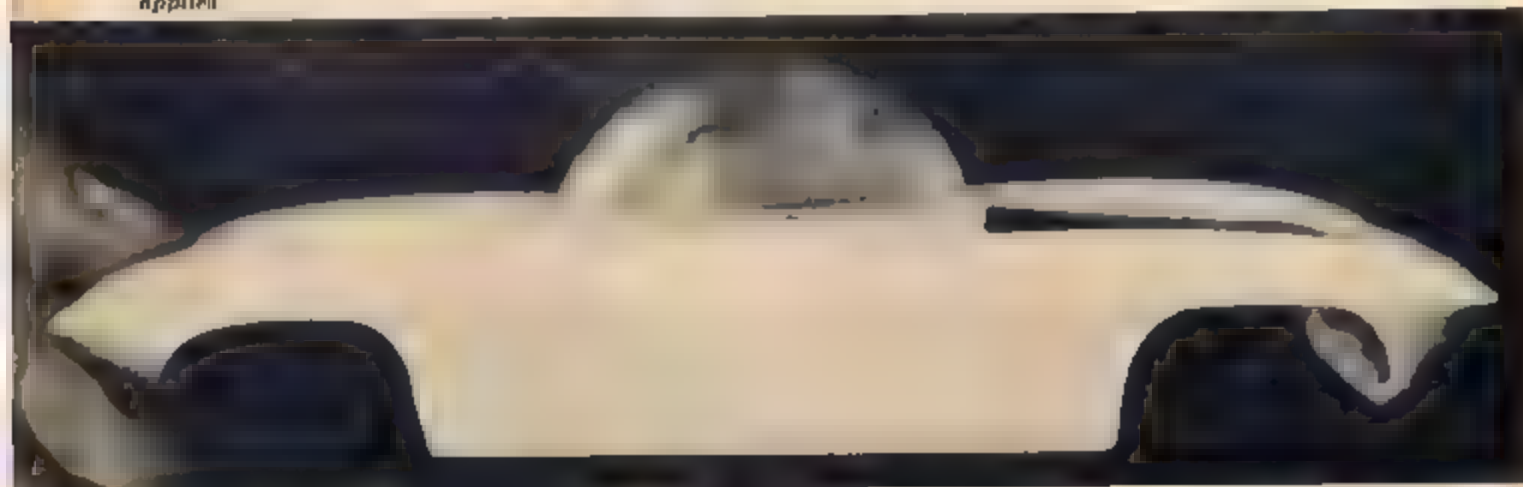
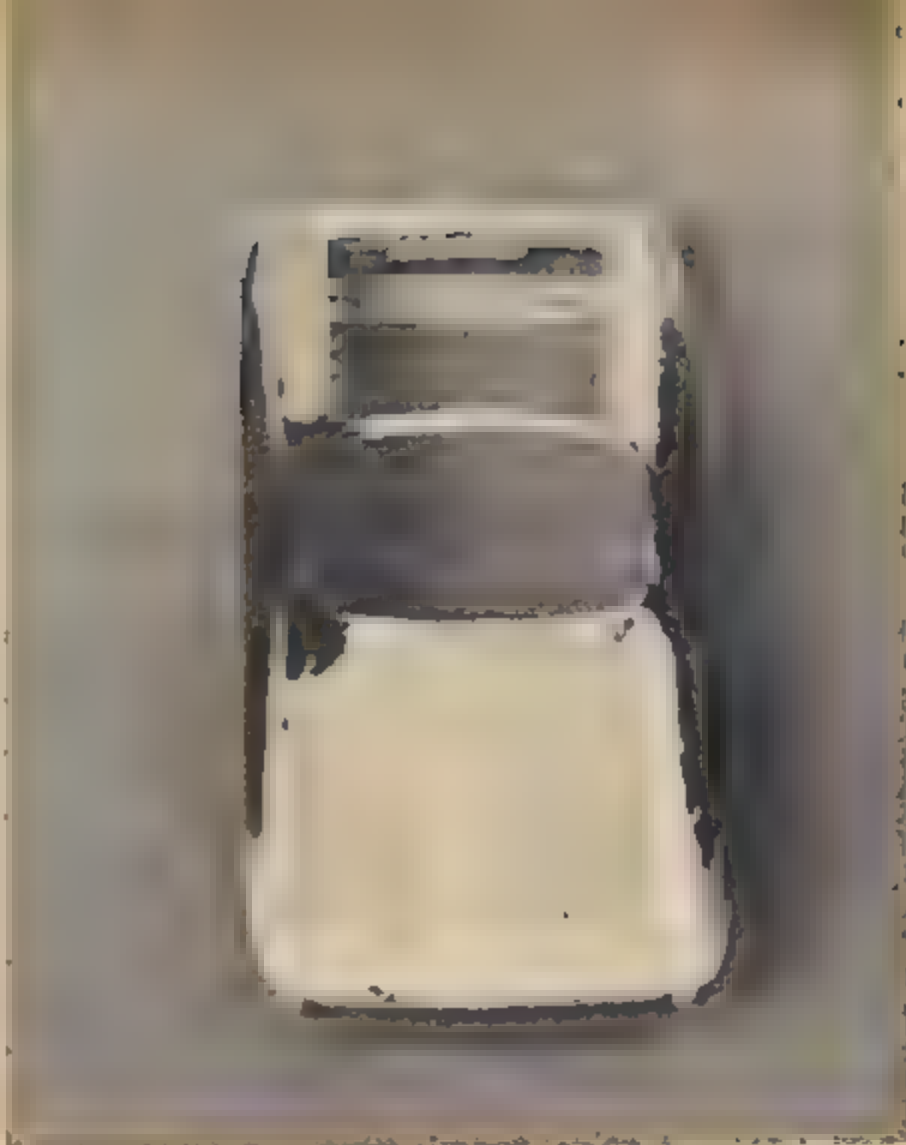
kit, cut apart. Chrome pieces are cut separately to fit, these should be about 1½" long. This dimension depends on the builder's positioning of head lights. The rear taillight lens is made from red plastic from Revell's taillight kit or fabricated plastic.

Frame is made from two Corvette frames found in these kits. The first frame is cut at crossmember where transmission meets the driveshaft. Second cut is 1½" behind crossmember. Second frame is cut at trans crossmember only. File and make sure these pieces fit together properly before gluing. Now glue this piece in between the second frame. Cut gas tank off behind rear axle. Frame can be puttied, sanded smooth and painted.

The Corvette firewall is sectioned 3/16" from bottom, should be glued under cowl.

To achieve a low effect, try small tires from AMT's '63 Chevy II station wagon kit with wire wheels.

V-4 After body is completely puttied and sanded a good primer coat is applied.



The interior is a detailed and difficult job. Apply material on masking tape and bend to shape of bubble. This car can be a single or double seater. Seats can be made from AMT's boat kit along with steering wheel and chrome gas pedals. If Beatnik Bandit bubble is used, interior will fit easily with minor modifications.

Choice of color for this dream car

is up to builder. For best results interior should be done in a contrasting color. When painting refer to article in the Feb. '64 issue of MCS for more details.

Engine is AMT's front-mounted blown Chevy with air scoop out of AMT Boat kit, or almost any other engine will fit into this large compartment.

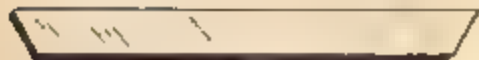
Laws and regulations will have to

be changed as the cars become a reality instead of a dream. Whether or not this type of car is feasible is up to the builder. The public will have to be gradually initiated to the futuristic design of the dream car. Trends along this line are presently being attempted by most Detroit manufacturers and many of the customizers through their displays at car shows and World Fairs.



V-5. Fill and sand smooth lips of front and rear grill cavities.

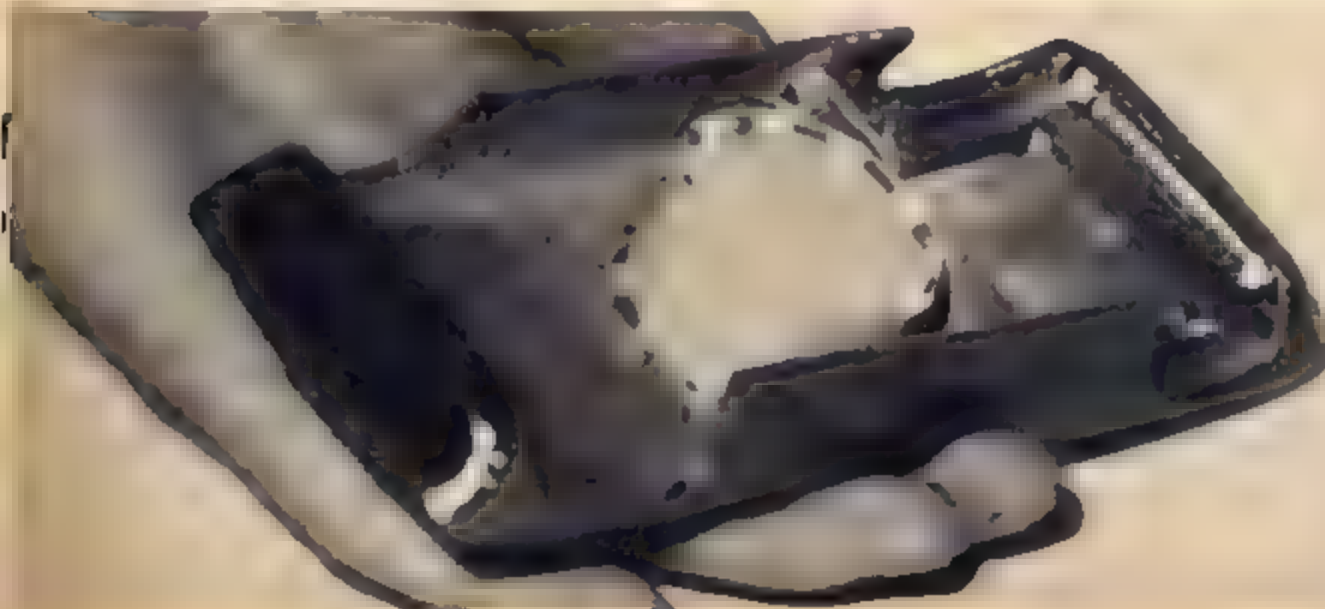
V-6. Corsetta frames are marked at crossmember and $\frac{1}{2}$ " behind. Pierce out of bottom frame is inserted in top frame. Gas tank is cut off at rear axle.



V-7. Taillight lens cavity is shown here. Little or no filling will be needed for a snug fit of the lens.

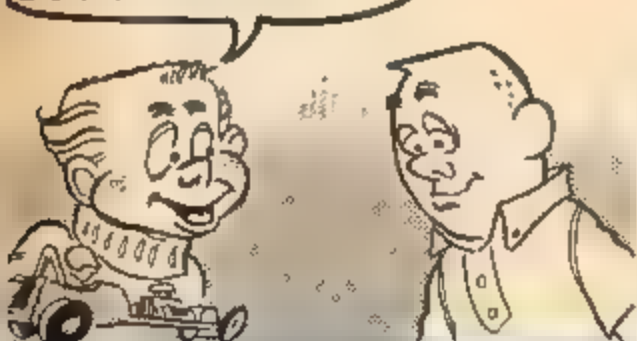


V-8. Masking tape secures interior to conform with shape of the bubble.

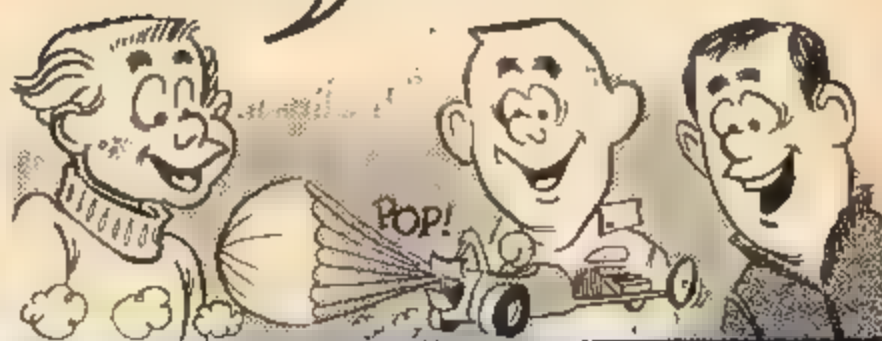


McMODEL the MASTER BUILDER

WATCH THIS! IT'S THE LATEST THING IN SLOT RACING...



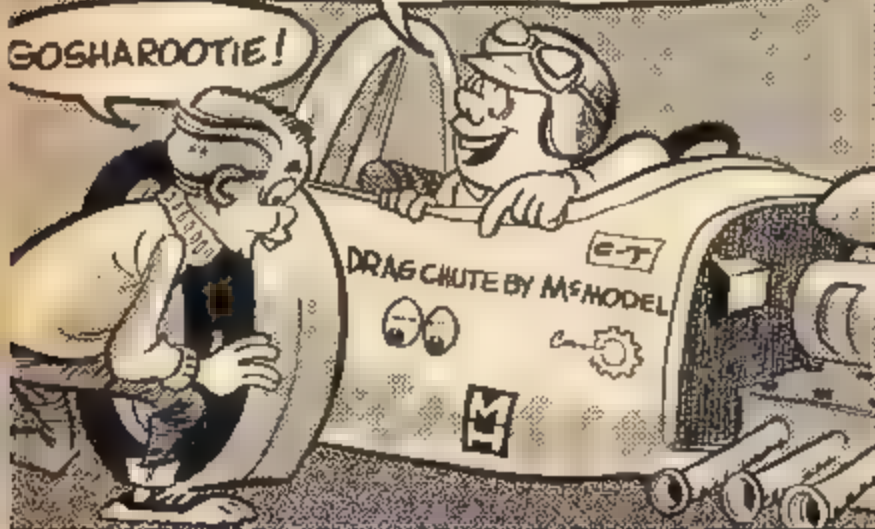
...A DRAG 'CHUTE FOR STOPPING MODEL DRAGSTERS!



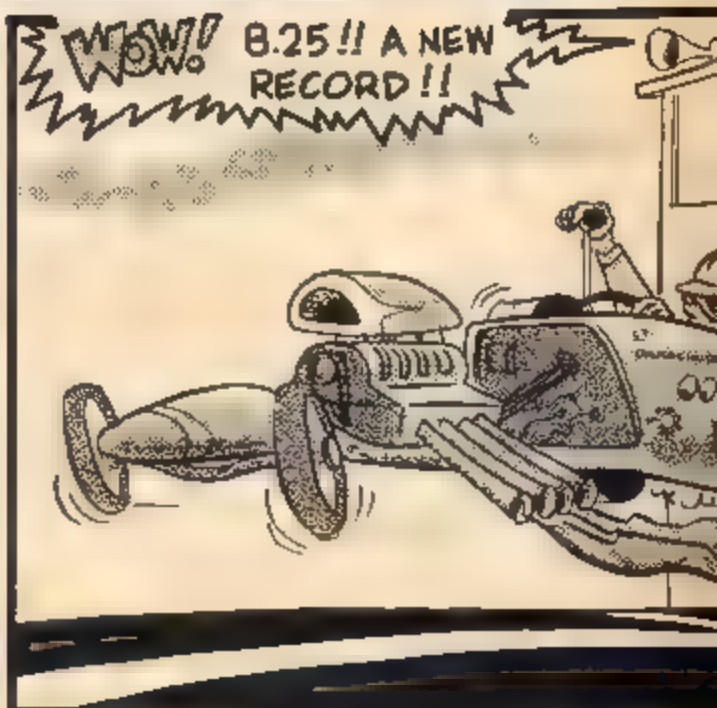
LATER AT THE DRAGSTRIP

WE'RE ALL SET. NOTICE WE GAVE YOU CREDIT FOR THE 'CHUTE!

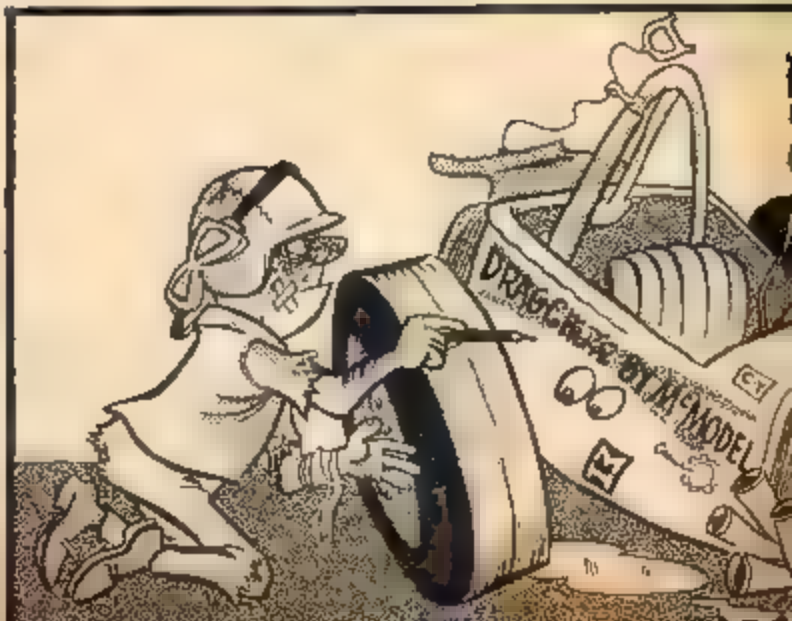
GOSHAROOTIE!



WOW! 8.25!! A NEW RECORD!!



CRASH!



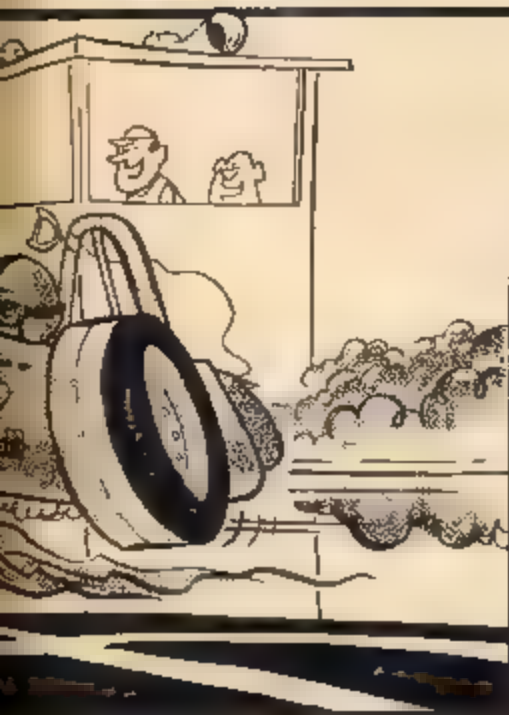
GEE, M&MODEL, YOUR DRAG 'CHUTE IS GREAT! IT SURE GIVES YOUR MODEL AN AUTHENTIC LOOK!!

AW SHUCKS

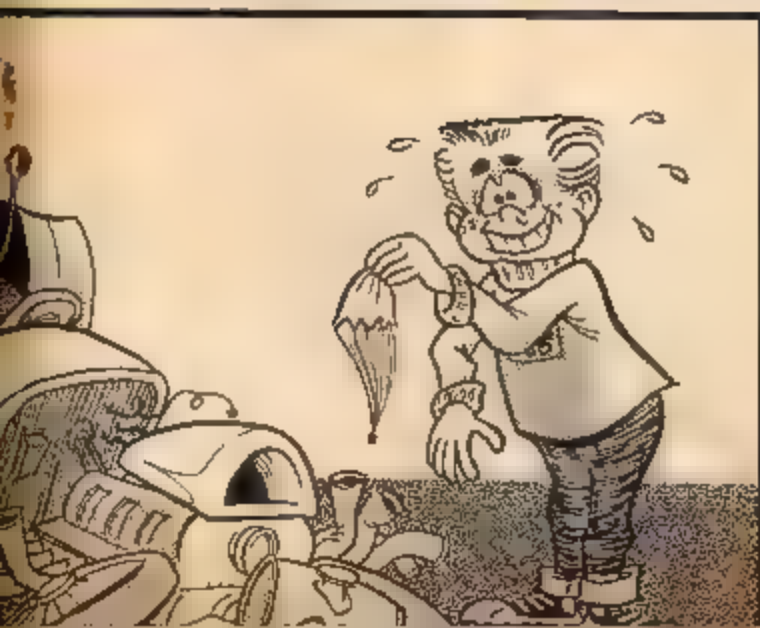
HEY, OL' BUDDY, HOW 'BOUT MAKING A 'CHUTE FOR OUR FUELER?

YEAH, C'MON M&MODEL!

WELL, OKAY!



POP!



M&MODEL SALUTES

The ACES
WASHINGTON, D.C.

COOL CUSTOMS
OZARK, ALABAMA

The DRAGSTERS
RANDOLPH A.F.B., TEXAS

The MODELERS' 4 CLUB
SAN JUAN, PUERTO RICO
HOLY TERRORS
OKLAHOMA CITY



TOOLING THE TWISTER



Original styling and unique paint job make the Twister a stand out.

M.C.S. Explores The New Look In Dragsters

By Bob Hoepfner

ASK ANY MODERN TEENAGER the question "what is a twister?" Your answer will in all probability be: Chubby Checkers. But ask the hot rod enthusiast and your answer will be without a doubt, "it's a cool one man, powered by Ford," and you know he is right. The new Ford concept of active participation as proof of performance has furnished the icing on the cake of many bench racing sessions this past year. If all the rumors of things to come do materialize, their aggressive attitude is bound to find more attention from the followers of performance automobiles. Take this original design study of a dragster as evidence, the Twister, aptly named as it will take a car load of torque to wind up those large slicks reported to be 11.00 x 22.5.

The initiative shown by Ford Motor Company in presenting this 3/8th size styling study to the public last fall has prompted us into visualizing how the actual car would be engineered. With the idea in mind of building a model of it, incorporating as many new ideas as no doubt Ford engineering staff would, we must first assume that the basic concept conforms to the current design pattern adapted by the majority of builders. Weight concentration toward the rear, engine in front, driver in back of axle, small lightweight wheels and tires at the front and a drag chute on the tail.

A few photos and the basic overall dimensions are all of the research information available so we will have to use our imagination and see if we can out-guess the energetic Ford engineering de-

partment. Using the few photos released, we find many small departures from the more or less stereotyped top competition cars of today.

1. Front wheels if of wire, are covered with discs.
2. One small centrally located air intake duct.
3. The twin 427 cu. in. engines appear to be canted outboard.
4. Rear wheels and tires are much larger than normal.
5. Drivers compartment discloses, a brake pedal, accelerator, oil and ammeter gauges, a transmission selector lever, tachometer and a semi-reclining contour seat.
6. Drag chute pack mounted very low contrary to accepted practice.
7. Absence of a push bar which perhaps denotes battery starting and ignition, or at least auxiliary battery cart starting (as used on most Indy cars).

From here on it's anyone's guess as to what will be used, if and when the full size counterpart will be built.

The horsepower output indicated at 950 is very modest for an all out drag machine, with over 400 H.P. available in the super stock sedans. This would indicate that no supercharging or fuel were to be used. This size of an engine fully modified and blown should produce a minimum of 600 H.P. Perhaps an exotic carburetor setup as used on the Indy Lotus cars is in the offing.

Placing a gear selector lever in the cockpit conjures up all kinds of visions as to what may be expected. Obviously this is not a direct drive setup. We will leave this one to your imagination, how-

ever this entire train of thought tends to follow a pattern very completely discussed in Pop Hot Rod, December 1963 issue titled "The Rod Of The Future," by Barney Navarro. Perhaps we should include most of his projected thoughts on transmissions, sprung rear ends and steering in our car.

For the obvious reasons of strength and light weight, the chassis frame should be of multi-tube construction, not however on conventional lines if dual engines, transmission and a sprung rear axle are to be used. This will take a little time in preparation and planning to develop, as location of all major components must be established and their relation to each other known if every advantage is to be derived in eliminating all excess frame weight. Some modern Grand Prix chassis are a good example of weight saving, wherein each member will serve a dual purpose if possible.

The all-enclosed body presents a new concept for dragsters. There is bound to be a weight penalty imposed because of this and it will remain to be seen if it is offset by the reduction in drag at top speed. Ducting of air to the engines and the driver's compartment will require careful consideration. Engines consume large quantities of air at top rev's and the safety of the driver requires an adequate supply of fresh air and absence of fumes in the cockpit.

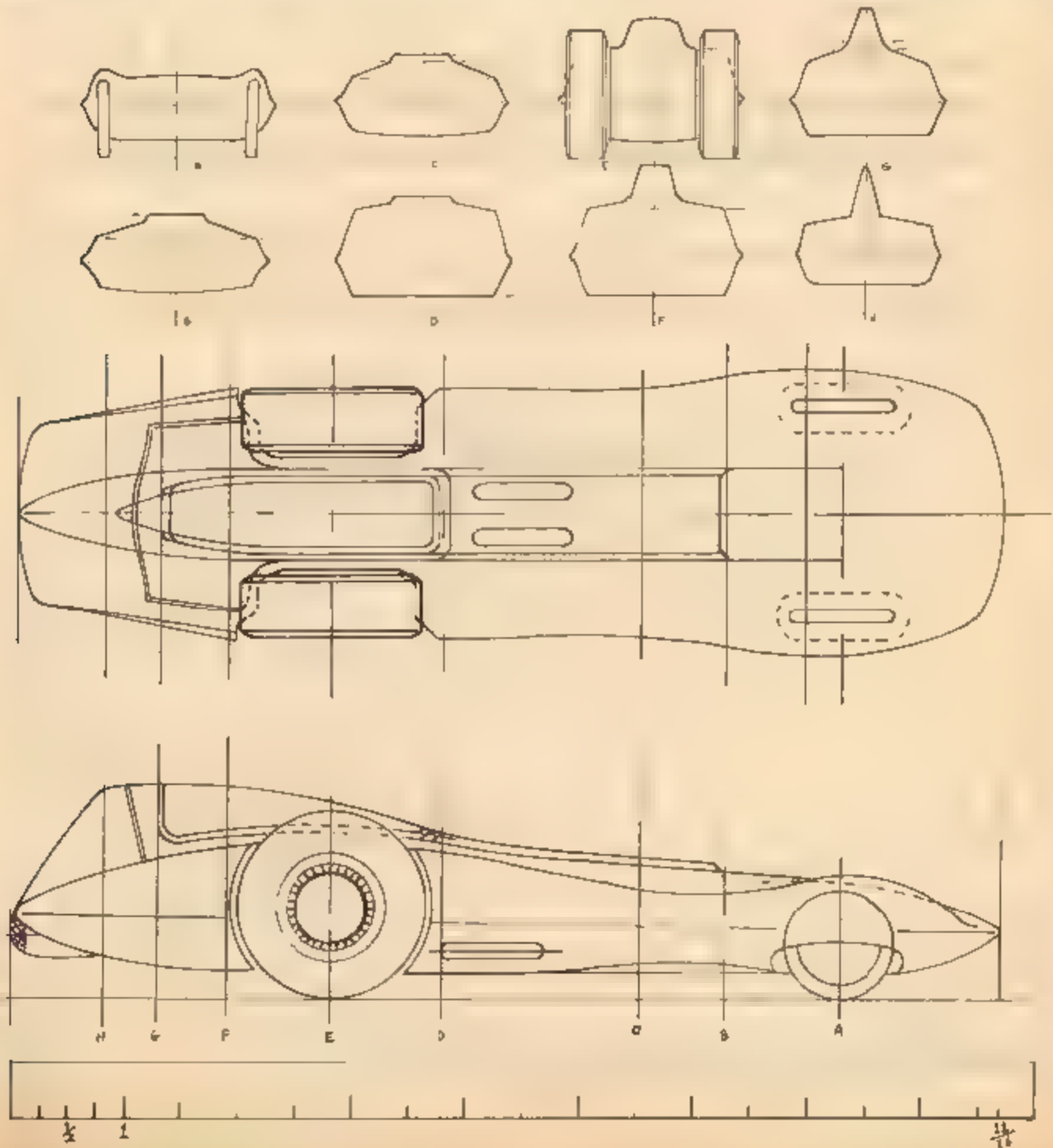
Well fellows it has been enjoyable discussing the design concepts of this dragster with you. Think I will head for the shop and start hacking away at a block of wood. Hate to waste all these ideas, so I am going to put them to work.



A white hot nose to cherry red at the tail. You paint experts should have a ball.



There is ample opportunity to show your skill in constructing this aerodynamic dragster.



Part II

Detailing the J-Ray

By Bob Paeth

When building a potential trophy winner, fine detailing on the interior is every bit as important as the exterior finish.

Too often I have seen beautiful cars "shot down" by contest judges because the interior was just painted, or worse yet, had nothing done to it at all.

In designing the J-Ray, it was decided that a scratch-built interior would be most suitable. Because of the many contours of the seats and door panels selected, flocking was used. Since the seats are form-fitted to the mini-man, he need not be cemented into place. This will allow the contours to be shown off.

One very important thing to keep in mind is to make sure that the seats will fit into the body when you are finished, so keep checking the fit as you go along. If the stock dashboard is to be used, you must first cut out the portions which normally house the speedometer and glove compartment. The mini-man's legs and his passenger's legs will fit into these spaces. With very little re-shaping, the

XK-E's exhaust system will fit perfectly. The only alterations being the connecting of the pipes to the engine manifolds.

Color you paint the car is up to you. This one was painted candy red with Texlor's Pla. The under part of the body was painted flat black for two reasons: first, on a full size car, it would not be practical to have an exotic paint job there, and second, it helps conceal the seams where the interior's floorboard was fitted. Windows were tinted with the candy red to match the body.



Using scrap plastic, make two sets of seat forms. Angles are made by just creasing with an electric pencil and bending the piece while still warm.

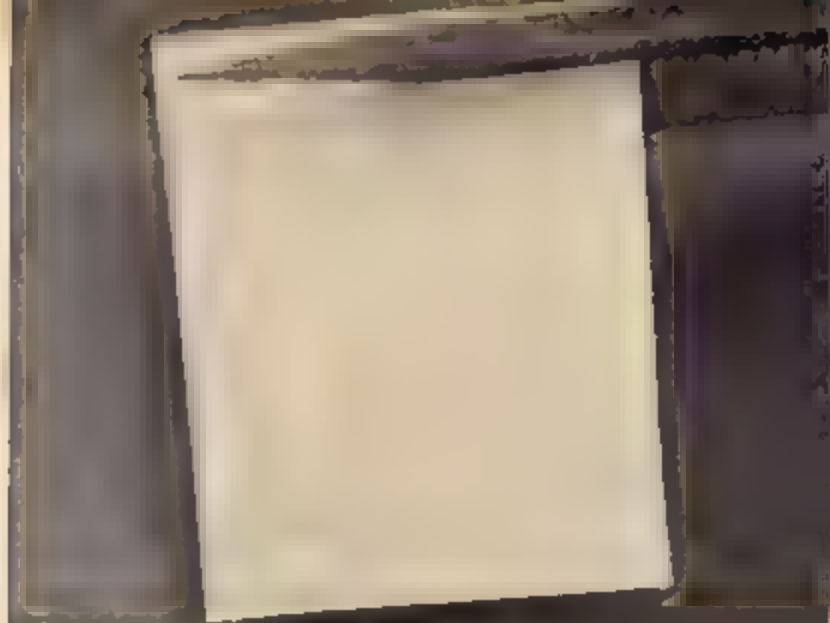
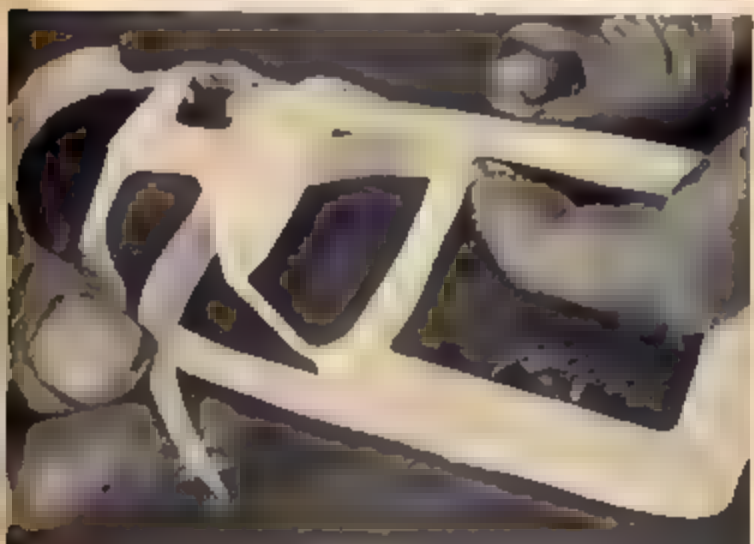


This shows how one of the seat forms will look when cemented into place. Make sure that both forms are the same size and are even.



Put the mini-man in place holding him with your fingers while you mold the clay around him. When you remove him, you will have a form-fitting seat.

Cut a strip of plastic and cement to the "U shape" and to the floor of the J-Ray. Again, a piece of paper should be used first to find the right size.

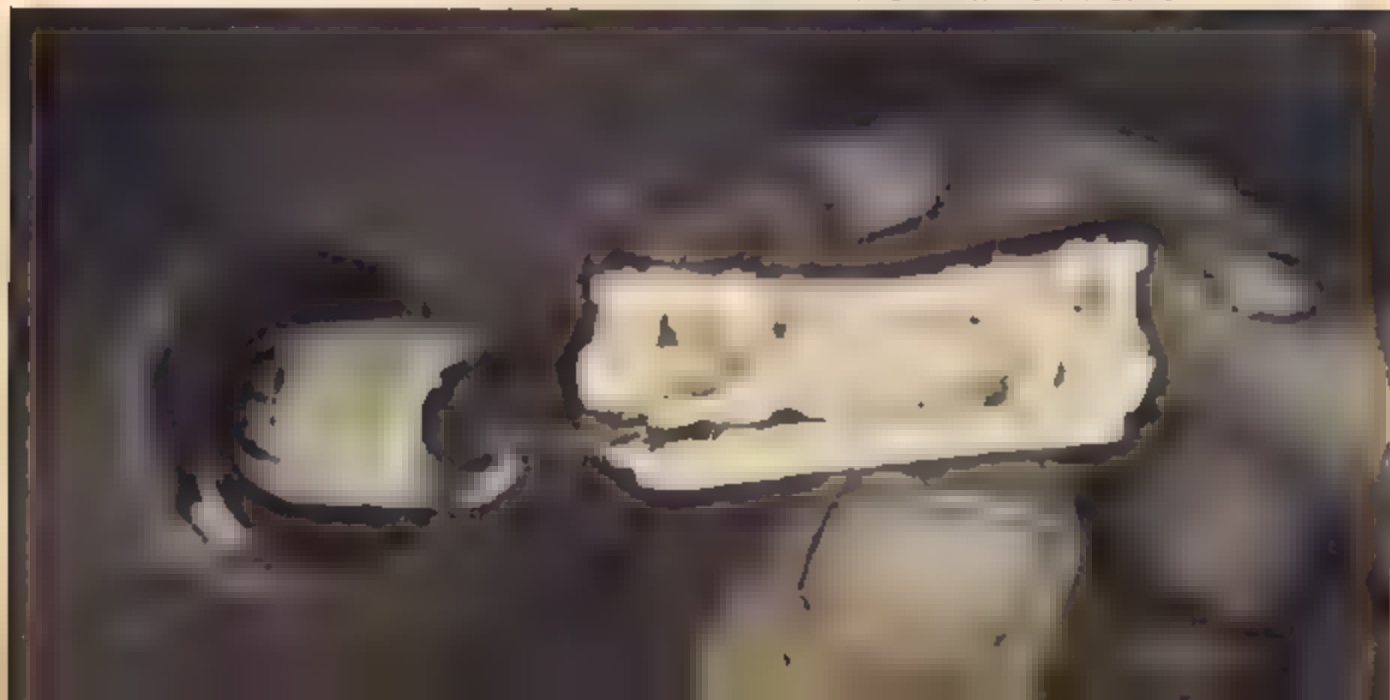


Make this "U shape" on paper first to be sure of correct size. After getting the right size, trace outline on a piece of scrap plastic, cut out and cement in place.

Hood must be cut to allow for engine clearance around the valve covers. When cutting is finished, sand edge from under side so opening has sharp edge.



SLICE TOP OFF DIFFERENTIAL AND SPRING ASSEMBLY THIS MAKES THE CAR LOWER



WINNING WILDKAT



This show stoping hauler makes a great addition to any custom collection.

"WILDKAT" was a '54 Ford pickup owned by Martin and Morris Scablan. Original custom work was done by Sam and George Barris for about \$1200.

An AMT '53 pickup truck kit makes a good starting point for reproduction of this famous custom. Tools you will need to build this model include: an X-acto knife, razor saw, ruler, glue, and putty.

First cut chrome tube grille with canted headlights off the chrome tree and position in place on the front pan. With a ruler along the outside edge of the canted headlights, use a wax pencil to draw a line the same angle as the edge of the headlights across bumper pan. This angle can be checked with a ruler. Lower corner of the mark should be 3/16 inch away from the bumper opening and upper edge of the mark should be 5/16 inch away from the opening. If these measurements are followed, the pan will have the correct angle to mate with the canted fenders. Next cut the ears off of the bumper pan.

Grille is installed snugly against the top ridge. Fenders are then bent inward following contour of the edge of the headlights. Fenders should be snug but not exceedingly tight against the headlights. Now secure them in this position with masking tape. The next step in this procedure requires the utmost care. If instructions are not followed exactly, disaster may occur. Heat a small pot of water on a stove until boiling hot, then dip the front part of the fenders into the boiling water for five seconds; remove and allow to cool for a few minutes. When cool, tape is removed and fenders should be canted nearly to desired shape. Beware! If any other part of the truck comes in contact with the boiling water it will become distorted and warped beyond repair.

In order to position the bumper pan between canted fender panels, 1/8 inch should be cut off bottom of the radiator.

The rise on the bottom of the fender that originally matched up with the pan must be cut off even with the edge of the fender. Fenders are then squared up, this is done by starting at the front corner and cutting straight to the back edge. Piece removed should have a triangular shape.

Fenders are filed and sanded to give them a rounded shape. Chrome grille and bumper pan are put in place and fenders are bent inward and glued to the bumper pan. Front assembly should be wrapped with masking tape to hold it in place and then set aside to dry at least eight hours. After the drying period has elapsed, bumper bracket holes in front pan can be filled with putty. Now grille can be masked off with tape for painting.

Rear fenders are the GMC's included in the kit. Tailight indentation is cut out and little lip is cut off. This should be filled with putty and sanded smooth after ample drying time has been allowed for the putty to set.

Use rolled pan and custom tailgate included in the kit for rear end treatment. Putty seam between bottom of bed and rolled pan, sand smooth. Follow procedure in November issue of Model Car Science (Page 26) for a sunken license plate.

Tailight housings and taillights from AMT's Alfa Kart kit are used. Install taillight assembly after painting your truck.

The custom gas cap and lakes pipes from the kit are now added. Running boards can either be painted silver to simulate chrome, or wide chrome tape can be applied to cover boards.

Patience will reward you with a beautiful "Wildkat" style pickup.



Cut along canted edge of tubular grille assembly with a razor saw.



Mount grille assembly in front pan. Using a straight edge, mark a line on front pan the same angle as side of grille.



Cut ears off bumper pan.



Grille is installed snugly against top ridge, fenders are bent inward following contour of edge of headlights.



Fenders are taped in this position with masking tape.



Fenders are squared up cutting so that edge of fender is parallel with rest of body.

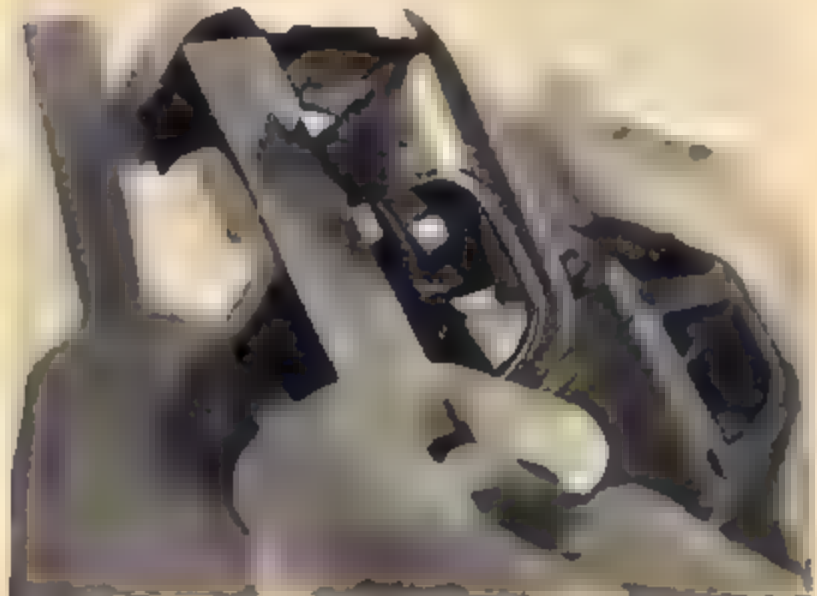


One-eighth inch is cut off bottom of radiator

Rise on bottom of fender that originally matched up with pan is removed



Front pan has bumper bracket holes filled with putty giving it a rolled effect.



CMC rear fenders have stunked taillight holes filled in with putty.

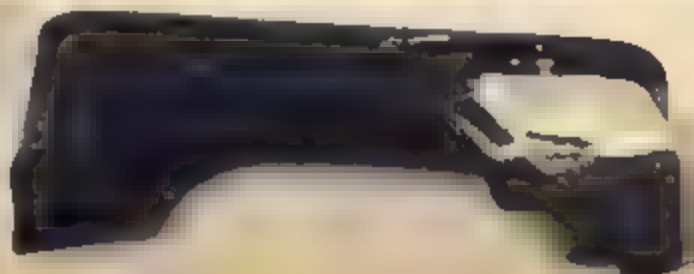




TABLE TOP RACING SECTION

PHOTO CONTEST Each month MCS will award valuable prizes to the readers who submit the best photos of slot racers in action. Send your photos to:

Table Top Photo Contest
Model Car Science
171 Barrington Pl.
Los Angeles, CA 90044

THIS MONTH'S PHOTO CONTEST WINNER IS
CHAN BUSH of LOS ANGELES, CALIF.

With the advent of slot racing, we see more and more table top race courses being built by individuals. Some of these are built strictly for home entertainment while others are for commercial use. Whatever the reason, we hope that this article, being a result of many experiments, will serve at least as a guide. The actual construction details have been covered in detail in earlier issues of this magazine, this will describe the layout design only.

Before you begin with the design, you must decide what the exact purpose of the course will be. Will it be for speed and speed alone? Will it be for taxing the roadholding of the cars a "road" course? How many people will be using it and, will it ever be used for commercial purposes ("pay as you drive")? Another important factor is to determine the

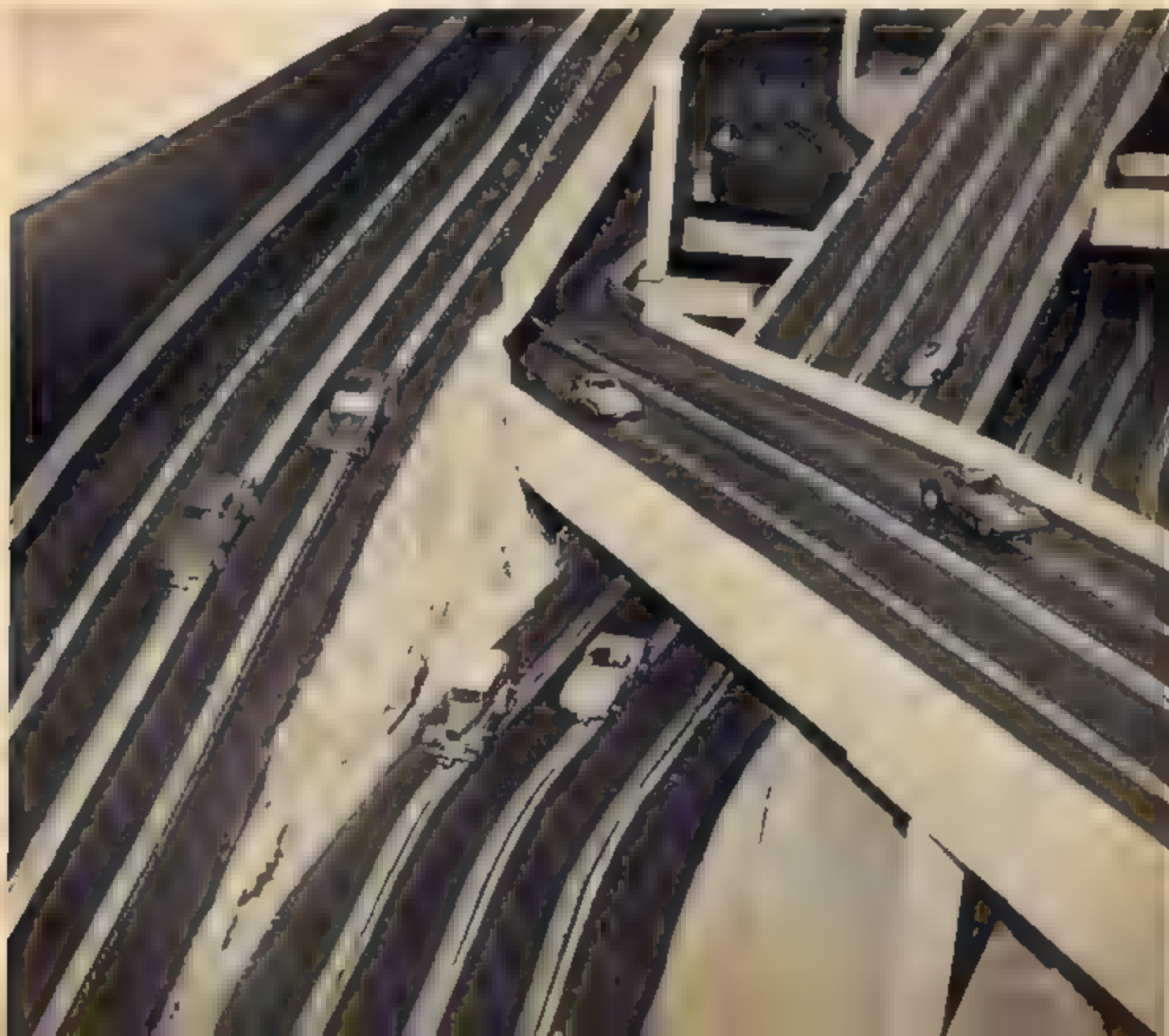
HOW TO DESIGN a SLOT COURSE

by George Siposs

anticipated skill of the users. This means that a course designed for very young or beginning drivers or, perhaps as a demonstrator, must of necessity be easier to drive and crashes should be made as avoidable as possible. On the other hand, a course for advanced hobbyists can take up just about any shape that you can dream up. Keep one thing in mind duplicating an actual road course is difficult and impractical for two reasons they require too much room and, the real courses were designed for cars which have basically different handling characteristics.

If you decide on a fast course, you will want long straights and few turns. Usually such a course will have turns in one direction only e.g., Indianapolis. You might find it boring to drive on a course of this type once you have mas-

Tired of the standard kit course? Here's a do-it-yourself project to add new thrills and realism for those starting down the scale trail.



EASY TO MAKE COURSES ON 4'x8' PLYWOOD

MODIFIED FIGURE 8

(M)

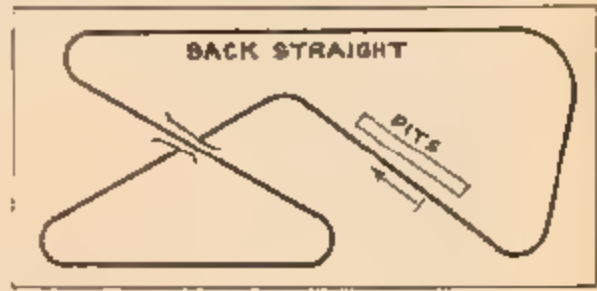


LONGEST POSSIBLE STRAIGHT

X X X

4'x8' SHEETS

(M)

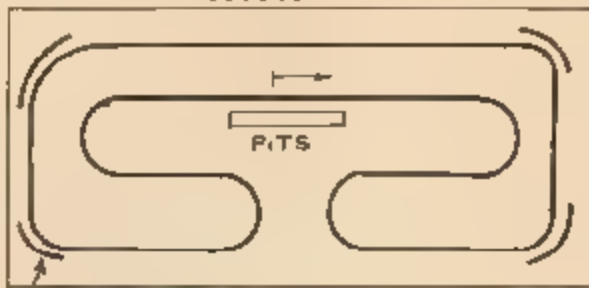


X X X

X X X INDICATES DRIVER STAND

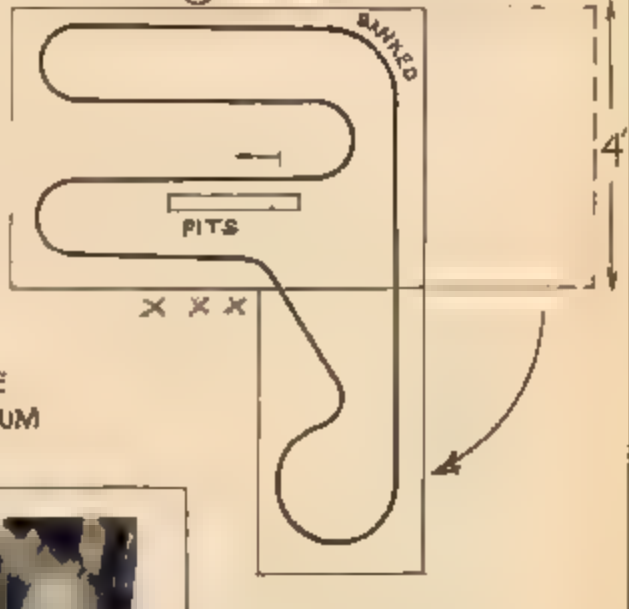
(M) WHERE TURN MARSHAL IS LOCATED

X X X

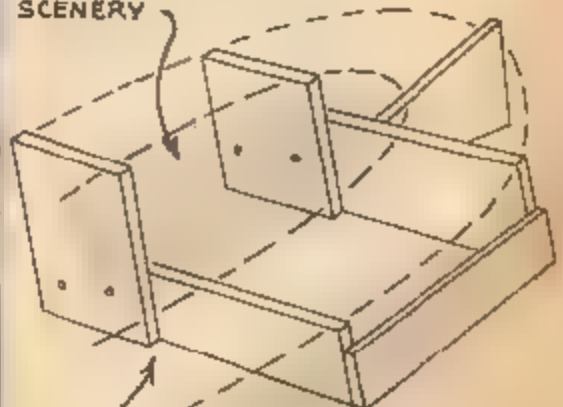


ALL OF THESE COURSES CAN BE 4-LANE
BUT 3-LANE ARE RECOMMENDED MAXIMUM

(M)



IDEAL FOR MOUNTAIN
SCENERY



YOU CAN USE FRAMEWORK
TO SUPPORT THE TRACK
SECTIONS PERMANENTLY

Sufficient room for operators and
spectators should be major factors
considered when planning a slot course.
Add-on possibilities should also
be considered with basic plan.



Three of the course layouts with Atlas HO sets, with variations possible with each. Additional trackage permits even greater variety. Simple oval at top is enhanced by chicane oval at top is enhanced by chicane prohibiting parallel running at the one section. At bottom is an example of 4-lane track with equal running distance for each car.

tered it. Cars can be specially tuned and they eventually develop into monsters that achieve fantastic speeds on this course alone but are almost useless on a twisty course. For the ultimate in speed you will want to make the corners banked so that speed can be kept up for maximum length of time. The course will take up either a very long and narrow area or it will have a large infield. In the former case the course can be put alongside a wall to save space. If it has a large infield, landscaping will be a must. This course is very suitable for demonstrations or, when it has many lanes, as a paying proposition.

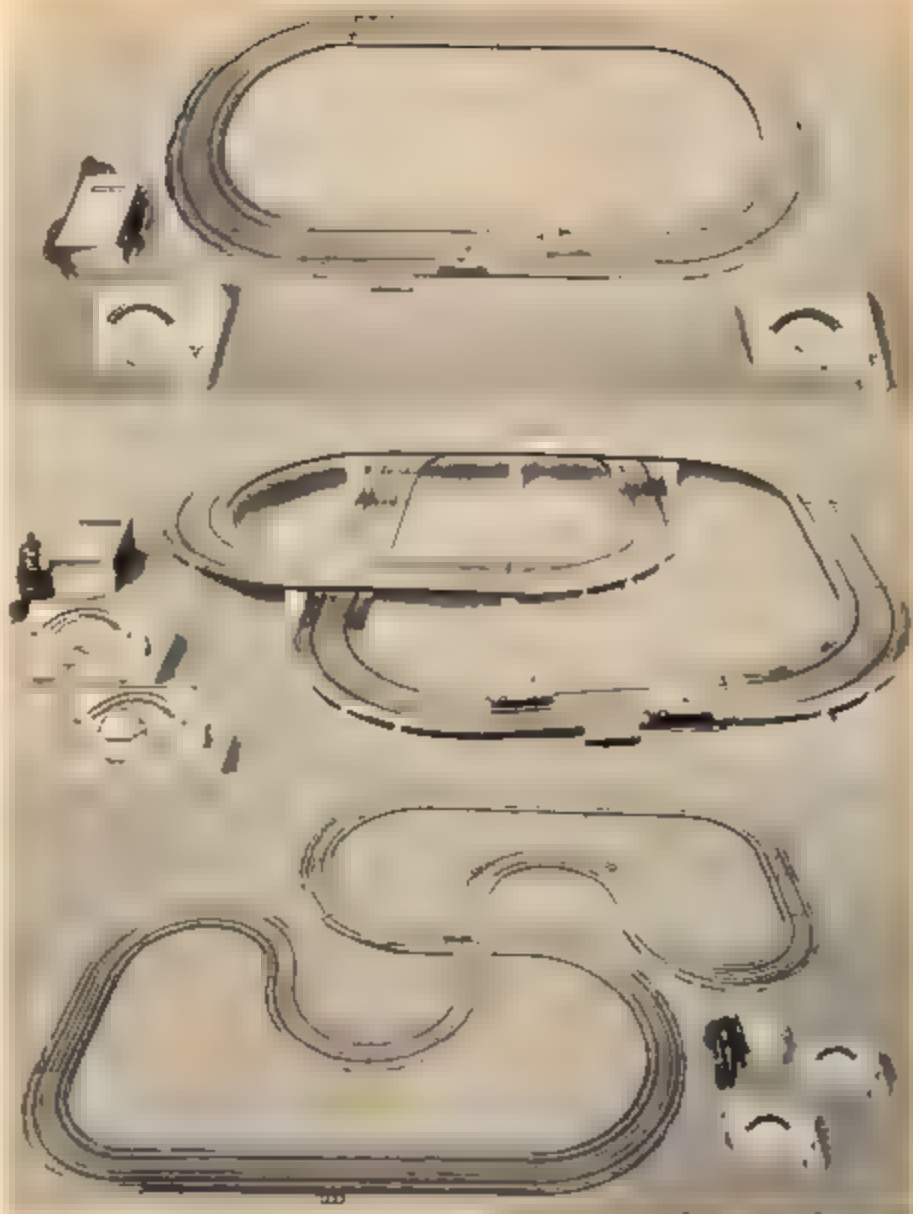
A road course requires more imagination in its design. It must have a starting straight (3 feet will do), a few medium length straights, an equal number of turns some of which should be hairpins and, a long straight where the big bore machinery can really wind up. After all you have to offer an equal chance for both high and low gear cars to make racing interesting and to encourage experimenting.

It is obvious that unless there is an overpass (figure eight) the lap length of the outside lane is much longer. The only way to get around this is either by making a crossing, (this is not realistic although offers opportunities for daredevilry) or to make the course two lanes only. The outside lane should have good solid railing on the turns so that the tail of the outside car can be "hung" on the rail. This way higher speeds can be achieved to equalize the cars.

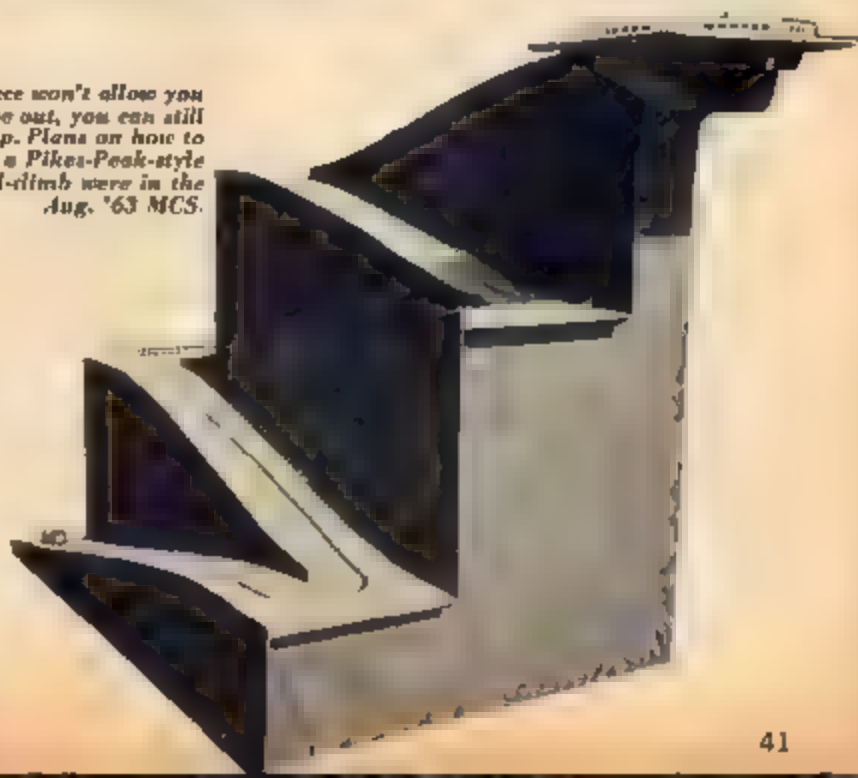
Practically everyone chooses a 4'x8' piece of plywood as a first approach. Tracks can be routed fairly easily and the plywood has enough inherent strength to support itself on legs. The board can be put on legs, hinged from the wall or hung from the ceiling (ropes on pulleys will hold it up) for out-of-the way storage. If you use particle board, you have to make a base structure first to support it.

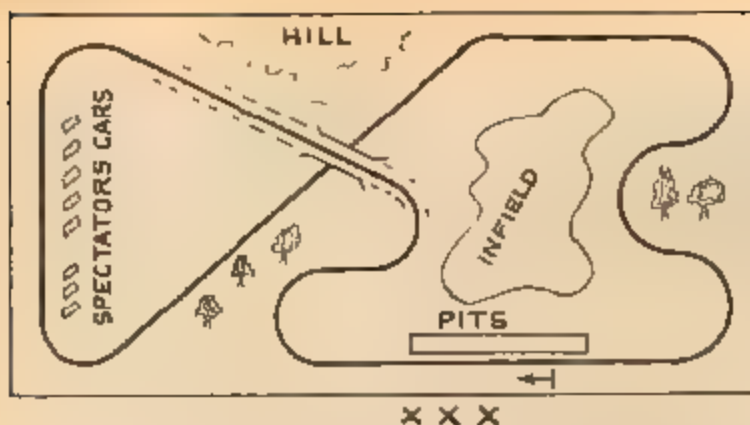
If the track is built on 2x4 inch frame and the track sections are not the conventional size plywood sheets, the layout lends itself very well to a mountain course with track sections at different heights. This is a more ambitious project recommended for experienced builders or clubs only.

Remember that each section of the course must be accessible so that you can retrieve de-slotted cars. If the track is



When space won't allow you to move out, you can still go up. Plans on how to build a Pike's Peak-style hill-climb were in the Aug. '63 MCS.

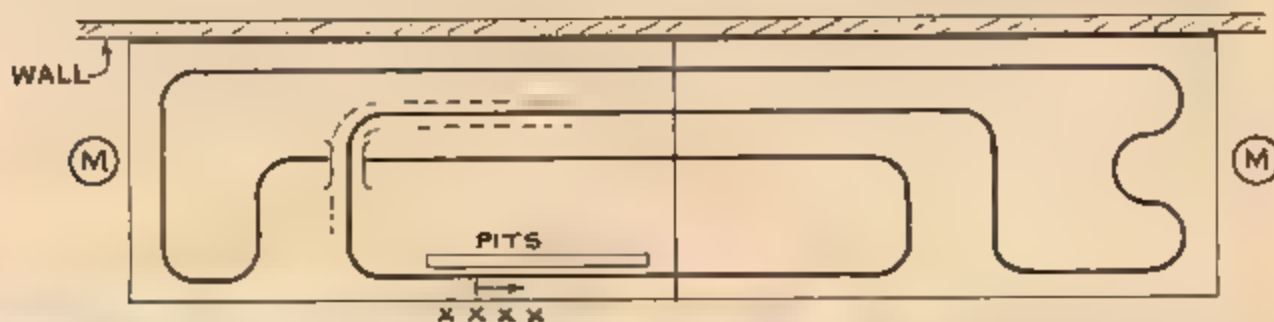




A conventional Figure 8 wastes a lot of space. Use short straights and linked hairpins to cover more of the area by track. Always leave room for pits and landscaping.

This course has, 5 right turns, 4 left turns, long straight, short straight, starting straight, hairpins, up and down hill sections. Result: a well balanced course, interesting to drive!

Ideal club layout on two 4x8 sheets against one wall of recreation room
Has four lanes, 14 feet straight

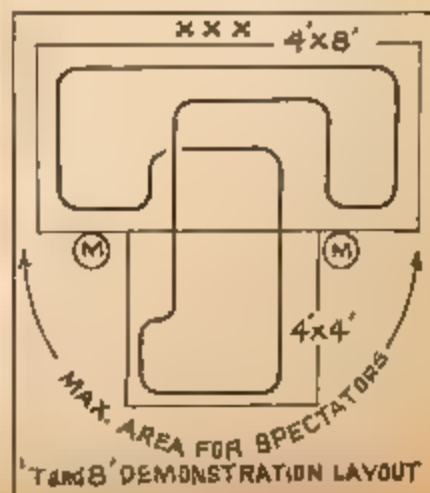
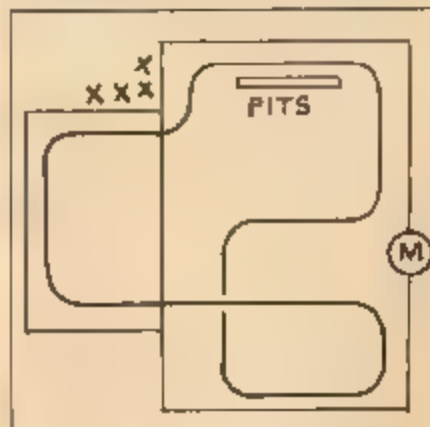


LOGICAL CONSIDERATION SHOULD BE GIVEN TOWARD COURSE BEAUTIFICATION.

NOTE: 'INSIDE 8' DOES NOT EQUALIZE LAP LENGTHS!



OUTSIDE LANE IS ALWAYS OUTSIDE





against a wall, it must not be wider than 4 feet, otherwise you must use a long stick with a hook on it to reach cars.

It is best to put the straights close to the edges of the board and the hairpins on the inside. Thus the dangerous sections, where cars are likely to fall off will not be close to the edges of the track surface. A course that "loses" cars is not very practical.

Try to put the starting line or, the driver positions, at a spot where the whole course can be easily seen from and possibly where spectators can not hinder the drivers.

If many lanes are to be cut, you must remember that this will reduce the lap length. In recent months we have seen an increasing number of courses where

the slots were cut fairly close together so that passing was only possible on certain spots. The starting line should have room for all cars abreast so they can race for the first corner which allows only a few to pass, the others have to slow down and wait for their turn.

A good course need not be rectangular. You can cut the plywood sheet into two or more sections if the area, where the course will be set up, makes it desirable to do so.

Don't make the mistake of designing the course too ambitiously, only to find that there is no room to complete that turn. On the other hand, don't make it too simple or it will turn into an uninteresting layout. Personally, I am against turns with a constant radius because it

Four basic road course layouts with track supplied in each of Tycor's sets. Endless variations are possible, as track need not be permanently secured, or a beginner with the least expensive set (top) can add track until his layout has grown to a larger size. Note train/car crossing in bottom layout.

makes cars look like model trains. Turns should either decrease or increase their radii for the utmost in realism. An easy way to create realism is to link the turns, i.e., after a left turn start a right turn without a straight etc., which makes cars look more "swifty" and demands good driving technique. One more word of advice: Do all you can to improve on landscaping by trees, signs, etc.

LIGHT UP FOR ACTION

Driving in the
Dark Adds
New Realism!

By Mac Kennaugh

MANY CLUBS looking for a change from the usual short races, have tried endurance racing, but this has sometimes been a little disappointing. To make it really interesting, it is worth an extra effort to bring realism to the race, and reproduce full size conditions as realistically as possible. One way to do this is to have a really long event of 6 to 12 hrs duration for teams of drivers after the style of Le Mans, and of course driving in the dark is part of the fun.

At least one of the manufacturers provides cars with working lights, and it is

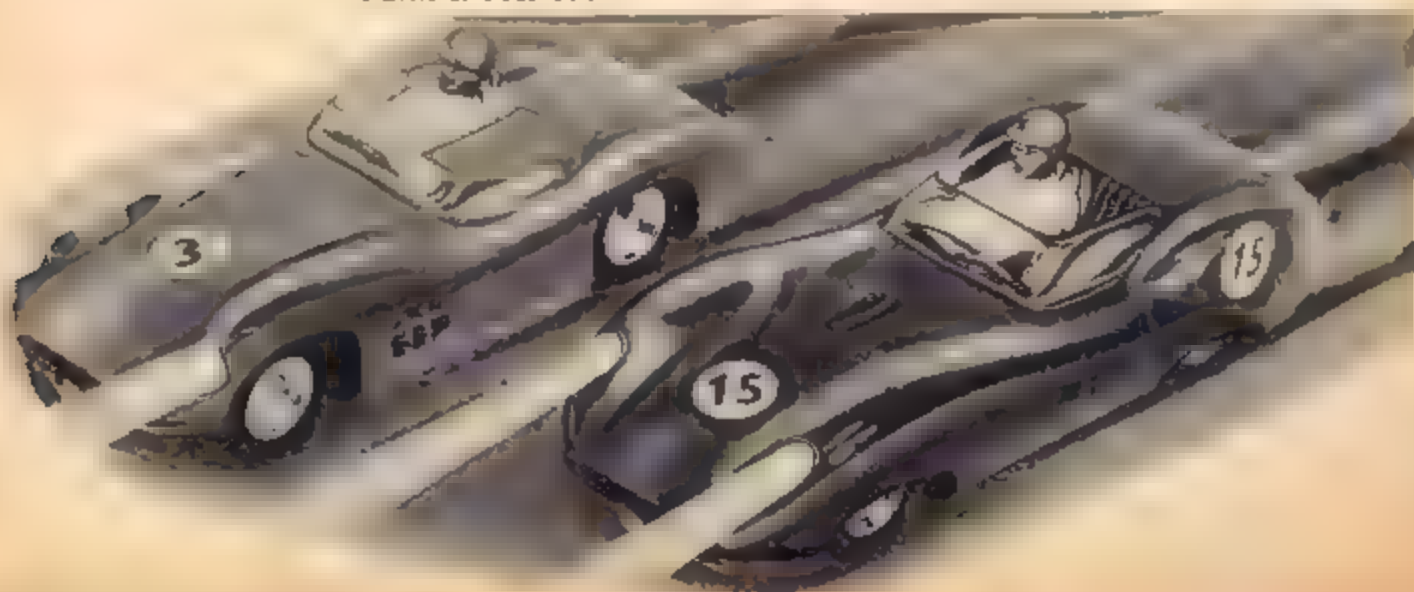
not difficult to fit lights on any mock or sports car, but the usual method of operating these has snags. They are fitted up to draw current from the motor power supply, and this means that each time you cut the power for a bend, out go the lights, and also there is an added load on the supply which can reduce speed.

How can this be overcome? Last year Ecurie Spa, the well known Leamington, England, club ran the first 12 hr. Le Mans race and included a period of 2 hrs. driving in total darkness. To maintain racing speeds and allow the cars to

negotiate the bends it was essential to have light operating independently, and heads were put together to devise ways and means. The result was an outstanding success and worked faultlessly.

It was decided that power for the lights could be supplied through one of the existing track tapes, and an additional tape not contacted by the motor pick up. Some experiments were made and finally a third tape was laid on the right hand side of the slot 1/8th in from the power tape. Track power is to E.C.R.A. standards, with positive feed left hand.

LIGHTS SHOULD SOON BE THE TREND FOR ALL ENDURO FANS.





negative right, so if your supply is reversed the third tape needs to be on the left of the slot. The original intention was to use 12 volts A.C. for the lights but we found that this could give an excessive voltage potential if lights and power were accidentally shorted across and might burn the motor windings, so second thoughts led to using D.C. at 12v. Initially we tried a car battery for the lights but again ran into a snag. If the situation arose where two cars without lighting and with the light supply off made contact through their motor pick up to the third strip, the power supply from one car fed back to the second, and the unfortunate driver found his car out of control. This led to more hard thoughts, and the final solution was to separate the light supply to each lane, the final set up being one 12v D.C. transformer rectifier unit for each lane supplying motor power and one similar unit per lane wired to the common positive L.T. tape and the third light tape. All that was needed now was to devise fool proof contacts, and this resulted in the three contact 'sled' shown in the diagram. The cars could be fully fitted with head and tail lights, and if desired a colored identically light — useful when driving in the dark.

Light bulbs were the small 12v. type used in model railways, and the sight of the cars racing around the circuit with lights blazing was most realistic, and the light proved to be quite sufficient for driving.

One tip to remember: allow for cooling air to the lights as the heat generat-

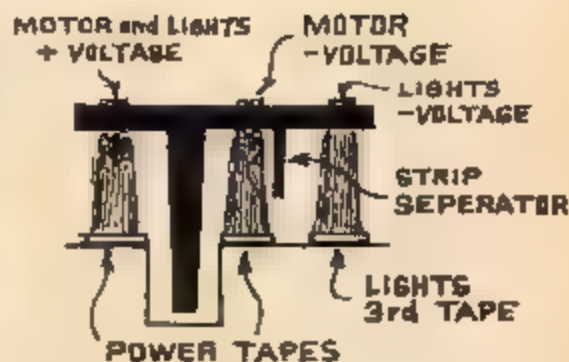
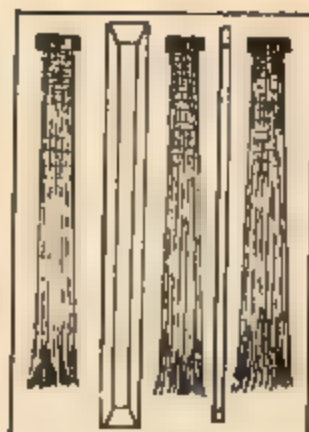


DIAGRAM of 3 CONTACT SLED GUIDE FOR LIGHTS

ed is enough to melt a plastic body, or blister the paint on a wooden car.

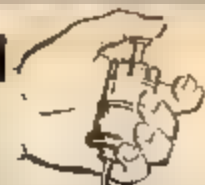
This method can be used on any type of permanent or semi-permanent track Scalextric or Strombecker etc. can be adapted by adding the third tape in copper or aluminum, stuck securely down with impact adhesive. The only point ever needing extra care is contact design. This must be made so that the two contacts on the light strip side will not spread apart and accidentally cross the tapes. Should this happen, you will get full continuous power to the motor, or lights giving too much voltage and blowing.

If you have not tried long distance races — it is real fun. Best way is to have

teams of drivers (one car per team) with scheduled pit stops etc. for fuel and maintenance. It takes a good car to cover 12 hrs. continuous running without needing some attention, and if the cars are well matched, the winner can be in doubt until the very end. We are planning to go for the full 24 hrs. next time, and on the experience of the 12 hrs. race, expect to give the cars a real beating.

For the record, winner was a 'C' type Jag which covered a scale distance of 1570 miles at a scale average speed of 130.83 mph, and with time for pit stops etc. deducted the Jag actually averaged 152.3 mph. So it was not exactly hanging about!

M
C
S



TRACK TEST



REVELL

REVELL recently introduced a complete electric racing car series in snap, screw and glue form. Everything needed to build a running car is in this box that sells for \$5.95. Revell's XK-E Jaguar is the car we chose to test this month. Looking inside the box we find two different operations to do: body fitting and gluing and chassis assembly. Time can be saved by doing both assembly functions at the same time. While glue is drying on one section of plastic

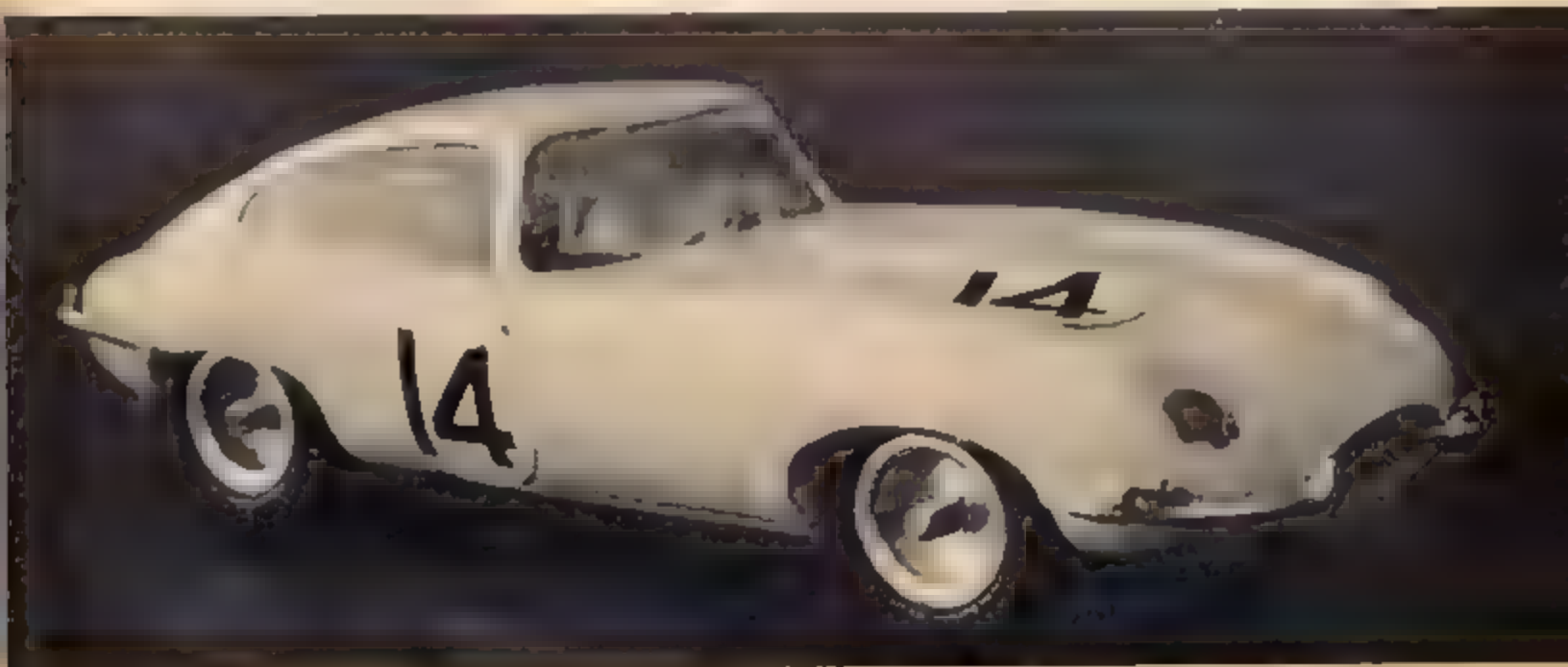
you can be mounting motor, gears, wheels, tires etc.

We find the Revell body to be well done, but containing too many pieces for a racing model. Scalewise it is quite good, being in the 1/32nd range. Frame and wheels are aluminum with steel axles and nylon guide shoes. The motor is the 3 pole flat twin magnet Mabuchi from Japan.

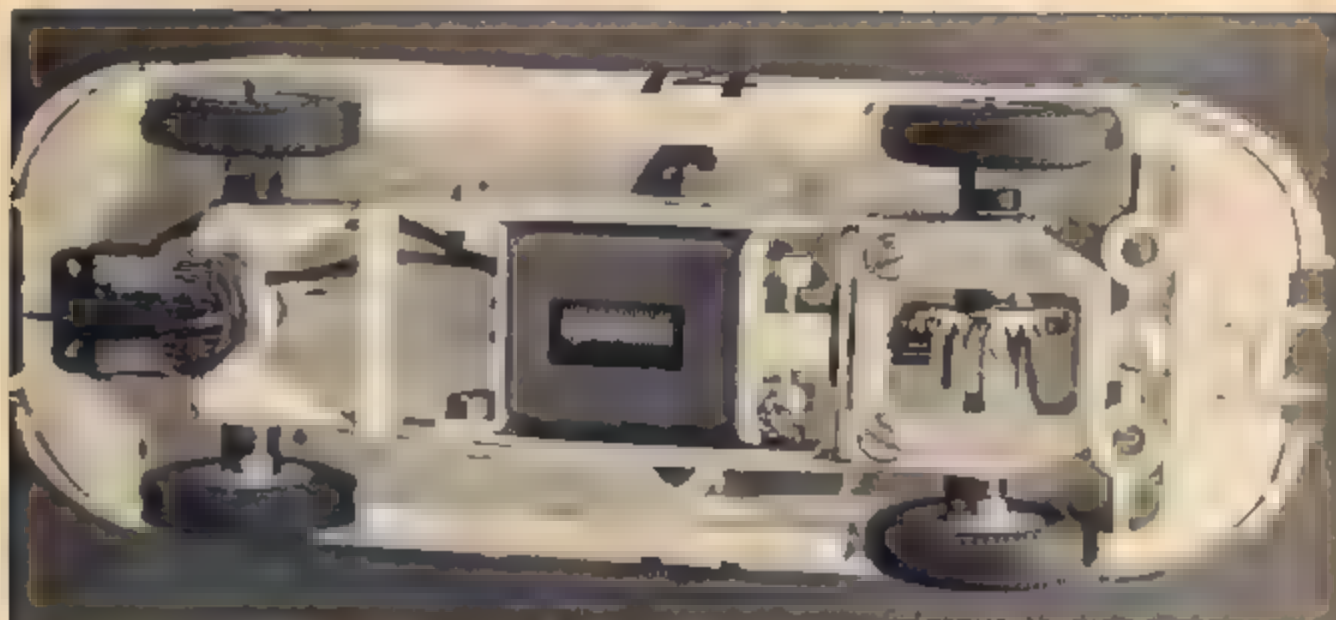
In the kit were 2 steel crown gears to mate with the steel pinion giving

either 3-1 or 4-1 final ratios. For our first test we used the 3-1 gear ratio and all the standard parts in the kit, no substitutes, making it strictly stock. I would like to mention here that in both cases, 3-1 and 4-1, the gear mesh was very good.

On this first test we found the wheels and tires to be quite round, therefore we had no bounce problems. Whenever you find a car that does not chatter or bounce, you have won a major battle



REVELL RACING BODY FEATURES DRIVER FIGURE, ROLL BAR, METALLIZED WHEEL INSERTS AND TRIM



JAGUAR UNDERSIDE SHOWS MOTOR MOUNTED IN PROPER POSITION

Our first test gave quite good results timewise, however the tires are not nearly as nice as they appear. They look great, but in racing they are much too slippery and bite-free. With the car handling well except for drastic drift and wheel spin, we felt a tire change was in order.

Using the Auto Hobbies' 401 tires on the rear for the second test, we found them more for go than show. This time we made a good move forward, chopping off 82-100th's of a second per lap.

The car was handling so well at this stage that to keep from getting into any costly modifications, we went back and installed the 4-1 gears. We put on the stock tires, making this another strictly stock test but at another ratio. Here we found braking action, a common situation with lower ratios, considerably helpful going into the deeper turns. This combination turned out to be faster than the first test, but slower than the second one. Our main trouble again arose from too little tire bite in straights and turns.

Our next test, which turned out to be our last one, was to reinstall the pair of 401's on the rear in conjunction with the 4-1 gears. This produced our best runs (as was expected from seeing the results of test #3). We cut 88-100th's second from the test #3 time and reached better than 1 second per lap faster time than test #1 produced.

Supposing all four tests are different cars running in the same race, let's see what we gained through our test. As our test car #4 completed 10 laps in a race to win, test car #1 would be in the latter part of its 8th lap, or about 1-1/3 laps behind. Test car #2 would be in the 9th lap about one half a lap behind the leader Test Car #3, at this same

time, would be also in the 8th lap but just a few feet from entering the 9th. The two fastest tests were those with the tire changes. In other words, the car with the 3-1 gears and A. H. Tires would beat the car with the 4-1 gears and stock tires, although the 4-1 geared car with A. H. tires was fastest overall.

The tire change added only 30¢ Amer-

ican coin to the car cost and seems a reasonable price to pay for time saved per lap.

Although this car does not come from a race track set and is kit form rather than ready to race, it is in the same price range. We felt it should be tested as it is a potential car to add to your stable.



TRACK TEST DATA:

Car Tested	Revell XKE Jaguar GT Advertised 1/32 Scale	Lap Times: Average of 5 lap runs seconds per lap
Tire Dia	7/8" for both Revell and Auto Hobbies	Stock 3-1 gears 8.56 Test #1
		A. H. tire 3-1 gear 7.72 Test #2
		Stock 4-1 gears 8.36 Test #3
		A.H. Tire 4-1 gear 7.48 Test #4
Gear Ratio	3-1 for test #1 and #2	I would like to point out that our main concern here is running. Therefore as you see the photos of the car it would not do well in the looks depart- ment. However, with the body finished properly and the included wheel inserts installed it could be built into a quite concourse appearing car. Our time was spent getting the best fit and gear mesh we could come up with.
Gear Ratio	4-1 for test #3 and #4	
Wheelbase	3-1/16" or 98" for true 1/32 scale	
Track width	1-11/16" or 54" true 1/32 scale	
Car weight	3-1/2 oz	

FINDING THE C.G.



**Center of Gravity
can make a Winner
out of an "also ran"**

by Bob Hoepfner



ALTHOUGH TECHNICAL articles pertaining to an analysis of any high performance potential, be it the actual car or one of our slot racing counterparts, will generally include many comments regarding weight distribution, center of gravity, roll centers and many other items, and their related overall effect upon the car's performance.

One of the most important factors affecting the performance of any car large or small, is an elusive thing called the center of gravity. You can't see, hear or feel it, but it is there, like it or not. We can influence its affect on our car by changing its location, this may improve, or adversely influence its performance. To properly understand the center of gravity and to be able to note its change of location as modifications are made will add to our knowledge of why some combinations prove superior to others.

Center of gravity in its simplest form, is that point in a body about which all the parts of the body exactly balance each other. So we can now compare it to the balance or fulcrum point of the good old see-saw, where numerous parts are placed upon the board at varying distances from the balance point and when the last part is added the board will remain level and in balance.

This simple little jig is assembled from scrap most of you will have lying about. The base is 8 x 10 inches notched to take the upright, which should be kept reasonably close to a right angle with the base. The rod on top can be of brass tube stock, wood dowel or drill rod, in this case it is 1/8th inch in diameter. The wire form needle pivoting on the rod is basically a check fixture. In use the base should be shimmed as required so the needle will hang vertically. A hook can be bent from a paper clip to fit your particular application, keep the end sharp so it will not slide around on the inside radius of your car body. By sliding your car back and forth on the hook you will eventually find the spot where it will balance and for exact center of



Base jig assembly requires a minimum of material and time to make. In use, the base must be shimmed so needle will hang at 90 degrees with base check using triangle or try-square.

Pivot point as shown is too far forward, keep moving hanger until car is horizontal.

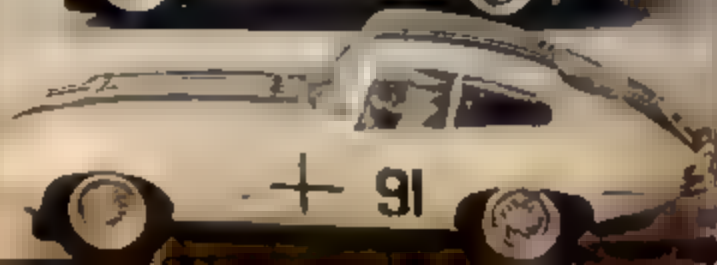


When properly located on hook, car will be parallel with base — now is the time to start checking axes with the triangle.

For exact center check axes in two planes, as shown, and at 90 degree rotation toward you.



THE FOUR CARS USED WITH CENTER OF GRAVITY POINTS INDICATED BY X'S. DUE TO LOWERING OF BODIES, UPPER TWO DO NOT COMPARE POSITION AS INDICATED TO EACH OTHER BUT TO A LINE BETWEEN WHEEL CENTERS



gravity the axle must be vertical to the base, this can be checked with a triangle or try square

All of our experiments have been on Revell's XKE Jaguar model car racing kits. In stock condition their Sting Ray appears to have a slight advantage in handling, due no doubt to a slightly wider wheel tread. We wanted to see if this advantage could be overcome, without making major changes in the basic kit design. The experiments proved to be successful, the XKE would show its tail pipes to the Sting Ray with ease and no changes were made in wheel base or tread dimensions.

The first change made was to add weight at the back, this will serve two purposes, the center of gravity will move to the rear and tire loading will be greater, improving traction. The simplest method of attaching ballast is to use the chassis to body mounting points, substituting 3/8 x 4-40 screws for retaining the lead.

Please remember that in this, as well as any modifications use moderation, with adequate track testing to properly evaluate every change. A small amount of time spent making a number of weights, each progressively larger, all drilled to match the chassis holes, will enable rapid changes for experimentation as well as adjusting for various race tracks.

Properly weighted, behavior in the turns showed a marked improvement and if you wish to disregard the scale tread dimension, further improvements can be gained. We chose to maintain standard width to avoid the freakish appearance of so many models, where true scale is sacrificed completely just for performance.



Top view of chassis of car #6. Note minimum of clearance between Pinion gear and motor bearing plate. Motor is centered between frame side rails.

Bottom view of same chassis (F) Lead ballast is installed with minimum track clearance. "Z" angle brackets are used to center forward end of motor and allow lowering to maximum.

The number two version was built in an effort to reduce somewhat the total ballast used which will also, by the reduction of total weight, improve acceleration. Approximately two-thirds as much weight is used distributed as close to each rear wheel as is convenient to attach. The body was channeled to lower the center of gravity of this unit in relation to the chassis. The wheel cut outs, required for clearance in lowering the body, add slightly to reducing overall weight.

Track performance was a pleasant surprise, proving that small changes can make a marked improvement. Flips and de-slotting were only encountered when our enthusiastic thumb punched the button too hard or soon. Rear wheel drifts were easy to establish, maintain and control. An added benefit we found in close quarter racing was the extreme lowness of the body, in any nerfing the stock height bodies would ride up on the rear section causing them to flip, with no ill effects to the lowered version.

The number three version is an all out attempt at improving the breed by lowering the center of gravity and moving it as far back as possible, still using stock components. The pinion gear was installed with minimum clearance with motor end plate, the remaining shaft length was filed off. Z-type mounting brackets for magnet end of motor were made from excess motor mounting brackets included in chassis kit. These allowed forward end of motor to be mounted in a position that just cleared track surface and the shortened shaft length moved entire unit rearward. Some wheel spin was encountered with the previous car so a slight additional amount of lead was added to this car and mounted as low as possible on the chassis. To do this, slots were cut on three sides of the weight to fit dimensions of the cut out in frame below rear axle. The flange were bent, slipped in place and then reformed with a punch to fit tightly on frame. The inside edges were filed to clear the contra gear. The body was then lowered as far as possible and still maintain a minimum of clearance. Wheel fairings and the cab section from the Revell Sting Ray were added to clean up overall appearance.

Track tests again were encouraging. With a center of gravity below wheel center line and moved slightly rearward improvements were immediately evident, no flips and most of the spin outs were due to forcing it just too far. No further changes are contemplated as response is more than adequate.

The information gained by this simple tool will not in itself improve the handling quality of your car, but used as a basis to evaluate the changes you do make and their effect, it can afford an increased understanding of how the center of gravity does influence a car's behavior.



WHICH TWIN HAS THE POWER?

Twin Motors Offer New Track Thrills

by Bob Koepfner

HOW ABOUT SURPRISING your model car racing friends and have a lot of fun doing it? Either of these twin motor jobs are an ideal project for the enthusiast who does not have the facilities of a complete home workshop to construct special scratch built models. The twin installation described in MCS in January 1964 issue prompted our thinking on this subject, however our interest here is in 1/32nd scale, and it was soon apparent that the wheel base would be excessive with this approach. Further thought and a few trial setups proved it could be done.

Both cars are assembled from Revell's new complete package kit #R-1086 which includes everything required to build a complete slot car. The new motor supplied is a small compact unit of surprising performance. More than adequate torque and revs are available upon demand. Its small size made it a natural for this type of installation, along with its light weight. The size limitation imposed by a 1/32nd scale will prevent the use of most motors available for twin installations as well as impose a distinct weight penalty.



They look like stock Sting Rays, but watch out! Response is something new, as you and your friends will find out.

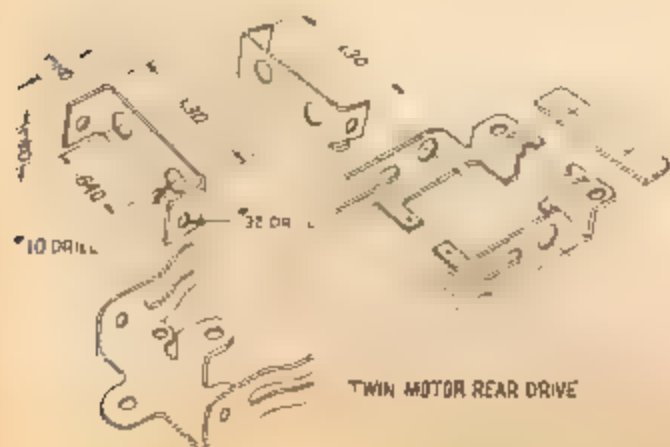
Purposely some dimensions are omitted in these sketches of motor mounting brackets as variations are bound to exist. They are only furnished as guides, since your personal preference on guide shoe location in relation to axle, as well as gear ratio, will affect dimensions as well as location. An example is the size of the clearance hole at front axle for the gear on the four wheel drive car. It will have to be larger for the 32 tooth gear than for the 24 tooth gear.

Construction generally follows the same pattern for both cars. The frame is first cut at centerline. Motor brackets are made of aluminum .032 thick. Some scrap stock usually can be picked up at a surplus dealer for these, or if not available use quarter hard brass. Lay out brackets, cut to size, form and then drill holes are required. Use the axles and motors for aligning frame side members and brackets during assembly. A word of advice, double check everything before drilling any holes between brackets and

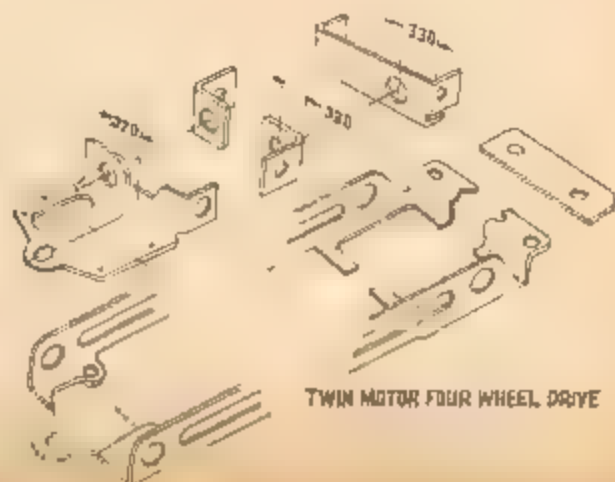
frame, in some cases clearance will be a minimum so use caution. Short, 1/16" soft aluminum rivets were used in attaching brackets to frame members. These were picked up at the same time as the sheet stock, however if not available use 0-80 screws and nuts. Most hobby shops stocking HO train items will carry them.

The motors on each of these installations are rotated at 90° to their axis, in this position ground clearance is all but missing. To counteract this condition the forward motor mount bracket on the twin rear drive has the frame attach holes drilled 3/32 off center toward the bottom, this will cant motors and provide clearance. On the four wheel drive job you will have to substitute slightly larger diameter tires.

The little time and effort expended on either of these projects should afford more than their share of fun and pleasure on the track, once they are run in and you learn their own particular traits.



TWIN MOTOR REAR DRIVE



TWIN MOTOR FOUR WHEEL DRIVE

TUNE UP AND GO GO GO

By A. M. L. (Mac) Kennaugh

Whether you race 'scratch' built cars, assemble stock parts, or buy a complete ready to run model, there are a number of points which need careful attention to get the best possible performance from your car; see to these and the rest is up to you as the driver.

First, what do we really mean by 'GOING'? For a dragster we mean reaching the maximum possible speed in the shortest time, but on road circuits, we mean lapping in the fastest time. These are very different problems, because the fastest, i.e. the car which will attain the greatest maximum speed, is very probably not the fastest car around a circuit, or down the strip, and the two problems need different approaches. Here, we intend to concentrate on the road racers.

To get high lap speeds two factors must be considered: the speed of the car in terms of acceleration and maximum speed, and the handling through the bends. Unfortunately the requirements of

these clash, and the best we can do is to get the best possible compromise, in other words, we may have to sacrifice some of the speed to get the handling right, or else go for sheer speed and hope our driving is good enough to hold into the slot. On balance it is better to go for good handling and lose a little speed, as in the excitement of a race, the speed merchant is likely to lose more by coming off than the slower but consistent driver who stays with it, and puts up consistently fast lappery without breaking records.

To start off, the car must be giving peak performance, and to do this, the motor must be able to put all it can into thrusting your car down the track. This means that all working parts must operate correctly, and you pick up all the power you can from the tape.

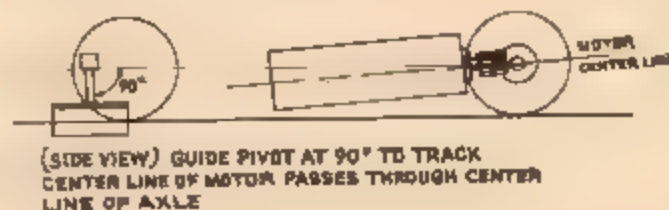
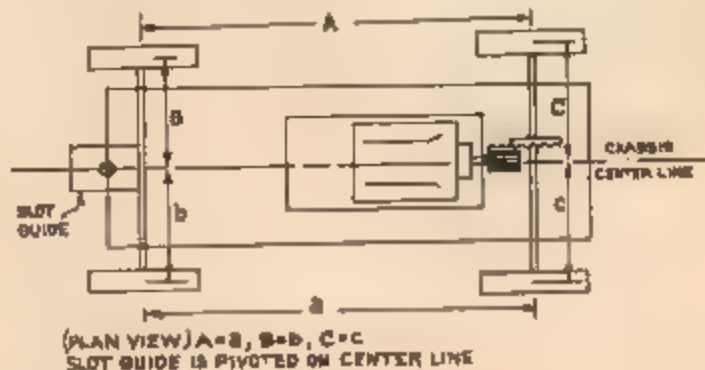
The sketch shows how all working parts must line up. Remember that dimensions shown equal should be *exactly* equal. $1/16$ th inch is too great an error and even $1/32$ nd can make a difference. True alignment of motor shaft and axle is very important, and gears should mesh so that they are neither too tight nor too loose. A good tip for getting this right is to set them up with thin paper between pinion and contrate . . . one thickness of cigarette paper for bevels, two for plain contrates. ALL moving parts must move freely, but be without excess play, sloppy axle bearings or steering pivots and guide pivots will lose precious seconds, so if they are sloppy, bush them or replace them. The top experts usually rework any purchased items to put them into top line, as these are made by mass

production methods, and reworking improves the performance.

The motor needs to be perfectly clean and only lightly oiled on the bearings. Clean the commutator with gasoline or dry cleaning fluid, and make sure the segments between the commutator are clean. A pin will clear this out. Commutator brushes must be replaced if badly worn, and the pressure of the brushes on the commutator set to give maximum revs.

Now for the pick-up. I see from the pages of MCS that there is some controversy in the US over the use of loaded sleds, I can assure you there is none in England, they are *out*. All cars must ride on their front wheels with the pick-ups and guide clear of the slot except for the contact end of the pick up brush. This does make the problem of picking up the juice more difficult, but who ever saw a Ferrari or Lotus with the front wheels in the air? The type with the front wheels just rolling would probably be accepted, but these are a hindrance to really fast cornering, so would be rejected by builders.

The current vogue in England is for the VIP slot runner, with a slight modification, to the brushes, making them longer and 'bushier' with finely stranded copper wire. This is similar to the Strombecker unit and this type seems to give the most consistently good results, providing the brushes are in good condition. Whatever you use, the brushes *must* be looked after. They must be long enough to give a good area of contact, perfectly clean and retain their spring. With use the arcing on the track makes them go soft and take a set so



that if they come out of contact they will stay that way and not spring back to contact. The solution to this is replacement. I personally consider a set of brushes needs replacing after about an hour run, even if they do not seem worn. Before a race I clean them with dry cleaning fluid and wipe with a soft cloth. Attention to them gives you best chance of getting through a race without trouble, so a type suitable for quick and easy replacement offers the chance of a quick change if you find yourself in difficulties.

Care to all these points will ensure that the car is up to snuff, but how to get these consistently fast laps is the next problem.

Regardless of the type of motor you are using, two opposites are the first problem. Light weight gives the motor a chance to move the car fast, but the more weight we have on the driving wheels the greater the grip on the road to transfer the power of the motor. This means that for each motor there is a best solution and for this we must take into consideration our gear ratios, that is, not only the drive gear but the tire size as well. October MCS showed how to work this out simply by obtaining the correct gears you need, but in practice you must also find the correct weight as well. Before reaching for the ballast, try different types of tires. Because one type works for a particular car and track surface, it may not be suitable for another. The experts generally have a good selection of different types and sizes to find the best combination. When you add weight keep it to as little as possible, 1/4 ounce in the

extreme nose or tail is better than 1 ounce slap in the middle . . . and keep the weight low down in the car.

September MCS gave a selection of tips covering much of what I have said, although I think one or two of the points mentioned need qualifying. We have discussed the need for weight to get a grip on the road, and the need to keep the car light to get the best from the motor. We cannot do both, so must experiment to find the best compromise. One often helpful hint to get that bit of extra weight in the places needed is to use a heavier wheel. Solid aluminum wheels with dummy spokes improved both handling and speed. You will soon learn when you have things right . . . too light and the car will come out of the slot in unexpected places such as on a straight

the acceleration is lifting the front end and out it comes . . . too heavy and it will be sluggish.

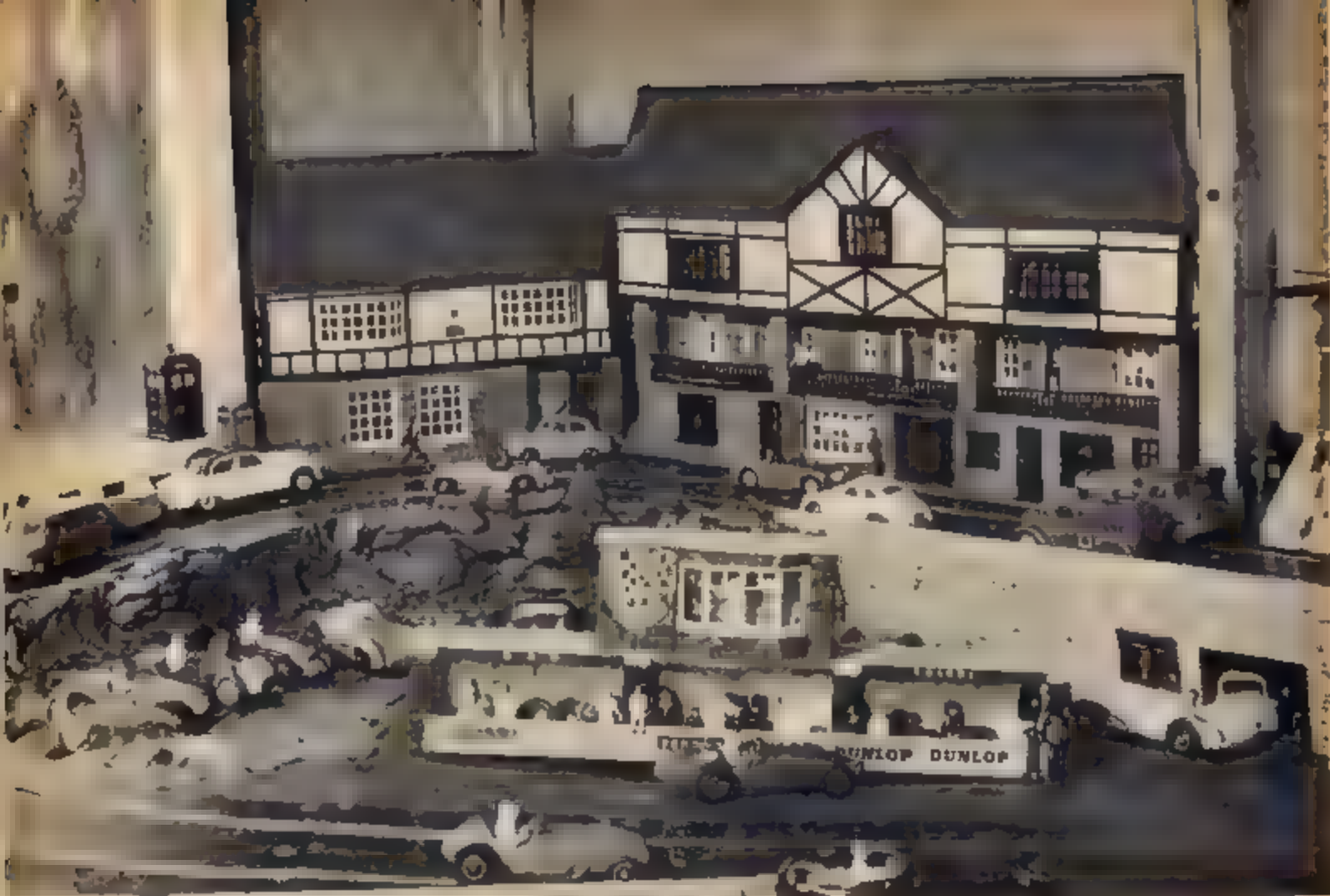
Now for handling. The biggest controversy here is still steering and non-steering, and another interesting argument has been raised over the idea that getting the weight as low as possible may not be best. First steering. I have built and raced both types, and the best I can say, is "It all depends." I think the steering car handles just a little easier and in a hard fought race, allows you to get away with driving errors more than a non-steering car. On certain tracks I have found it essential, particularly with a big car where there are tight bends to get around. A small car is definitely preferable if you do not want to use steering, but in all cases the handling of the car, i.e. its ability to go around the bends fast with

a controlled drift is affected by two things: total weight and distribution of that weight, and the position of the guide in relation to the front axle.

During your experiments to get the weight right, you will soon discover the effects of weight, not only on speed and acceleration but on the way the car goes around the bends, so your final result gives you the best of all combinations. A number of experiments in guide position have shown that every car has a 'best' place to fix this. You can prove this yourself by building a car and using a slot guide arm which enables the guide to be moved so that its center moves over about a half inch forward from a start position in line with the front axle center. Try the guide in different positions and see the effect on your cornering. A very rough result shows that a small car such as a Lotus FI, goes best with the center line of the guide very near to the axle center, but a big car such as a Mercedes Benz 154, is best with the guide forward. Again this is one of the things affected by the weight distribution, so no definite rule can be made.

The final aid to good handling has nothing to do with the car, it involves the controller. There are a number of good hand controllers now available, but the important thing is to use one which has a resistance winding which matches your motor. This is a hard one to sort out for yourself, but a symptom of 'un-matched' controller is if you find the car does not accelerate well on your controller compared with another type, or if the power comes in with a 'thump' and you don't seem able to drive smoothly.





AN ATTRACTIVE TRACK SIDE AREA IS BOUND TO ADD INTEREST IN SLOT RACING. THE ENGLISH SEEM TO LEAD IN THIS AREA.

Making the Scene

10 Professional Ideas to Help You Have More Fun! By Spencer Murray

ALL THE TRACK FOOTAGE in the world, a multitude of racing slot lanes, or miles of intricate wiring isn't the answer to the construction of an ideal slot layout. It takes something else; something that has little to do with racing as such. In a word: Scenery.

Every single road racing track has natural land contours surrounding it, rolling hills, a concentration of gulches, or high and low meadow-like areas scattered here and there. None are perfectly flat and featureless — like so many of the slot tracks that are based on a pooltable-flat surface.

It is important to the future of slot racing that interest not only be raised initially, but that it is retained indefinitely. Too many would-be enthusiasts have journeyed to the nearest hobby shop or club layout only to find it monotonous watching the cars hum around perfectly

flat terrain.

When it comes to building your own slot track at home — or if you are a member of a club that is presently engaged in constructing a co-op, multi-lane setup — work in a mountain or two, a series of gently rolling hills, or maybe even a cliffside where it looks as though some grading had to be done before the track was "paved."

MCS has, on several occasions, noted that a lack of scenic realism in slot racing was all too obvious. In fact, in the November 1963 edition we featured *Realism For Slot Tracks* in which the building of a scale, simulated mountain was described. In answer to a surge of mail regarding this timely piece, here is a follow-up; a series of Do's and Don't's that were most often the subject of our letters.

DON'T use real soil, sand or rocks to

simulate terrain, it's unrealistic, heavy, unstable, and will introduce dirt and dust into motors, gears and track slots.

DO use any of the special preparations available at hobby stores for landscaping. The pre-mixed preparations are best; those that require only the addition of water. They create the least mess during application.

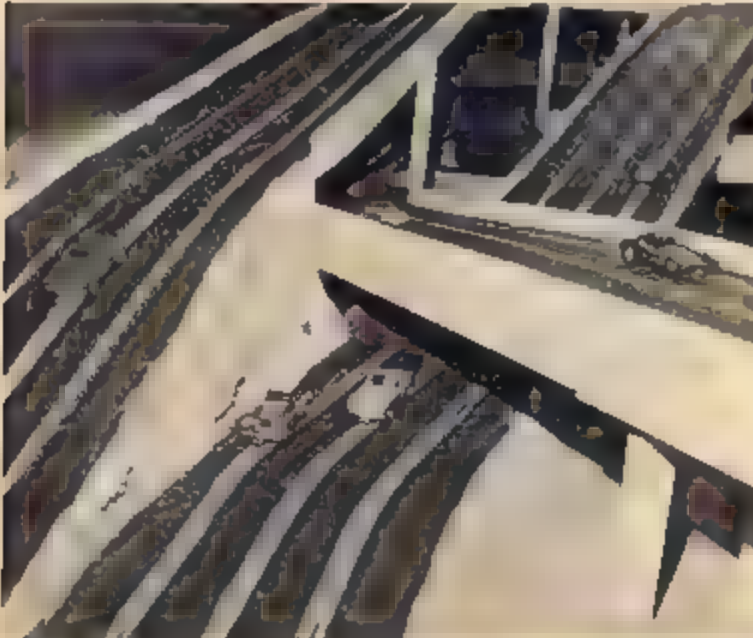
DON'T pile scale terrain on a flat surface to create a hill or an undulating mountain.

DO build up a rough underbase of scrap wood, covered with wire screen or heavy paper, to the contours desired. Spread the prepared mixture over this, a small area at a time.

DON'T combine vertical, rearing cliffs with perfectly flat "meadows." Though the two are sometimes seen together in nature, they are quite rare and will look "phony" to your spectators.



An otherwise bare crossover can be converted to a thing of beauty with a few blocks, wire screen, paper and paste.



Pit stops, track-side buildings, billboards and trees all add realism to a track.

Drab areas can be brightened by adding a "cliff."

This pit area shows the type of activity usually found at a busy course.

DO take a look around your home area and study the natural contours of the land. Look at drainage cuts, the slopes of low hillsides, etc.

DON'T crowd too many contouring details into a small area. Natural landscaping details are generally quite widely spaced; rolling hills and steep mountains merge only gradually over a great area. **DO** add grass, bushes and trees where they might most naturally appear.

DON'T combine evergreen fir trees with, say, autumn-colored elm trees. The two just don't grow together in nature.

DO try to create an overall theme to your layout. Landscape it so it is all desert, or all green meadows, or all mountainous, etc.



SLOT RACER'S

NEW IDEAS IN RACING MODIFICATIONS

by George Siposs

MAILING MODEL CARS

One of the most interesting facets of racing model cars is being able to compete in races far away from your home . . . by proxy that is. Races are being organized by the larger clubs and national organizations and, as in real car racing, invitations are sent out to other clubs and individuals. The invitation always describes the lap length of the course, maximum and minimum radii of the turns, gradients, road (track) surface and a map of the course. The rules and regulations are also given as well as the conditions under which lanes and starting positions will be selected. Provision is always made to provide drivers for cars that were sent in from the far-away clubs. The entry fee is nominal in most cases so here is a terrific opportunity for you to see how your cars will do under different conditions. You can rest assured that it will be taken care of by your fellow enthusiasts. In most cases the host club, if it is in a country outside your own, will have to post a bond to the customs people to certify that the car will be returned to its owner after the competition.

It has been found by experience that the best way to pack your Grand Prix racer is as follows:

First, wrap the car in heavy cellophane or nylon. Putting it in a nylon bag will do. Then get a corrugated cardboard box approx. 4x4x10 inches large



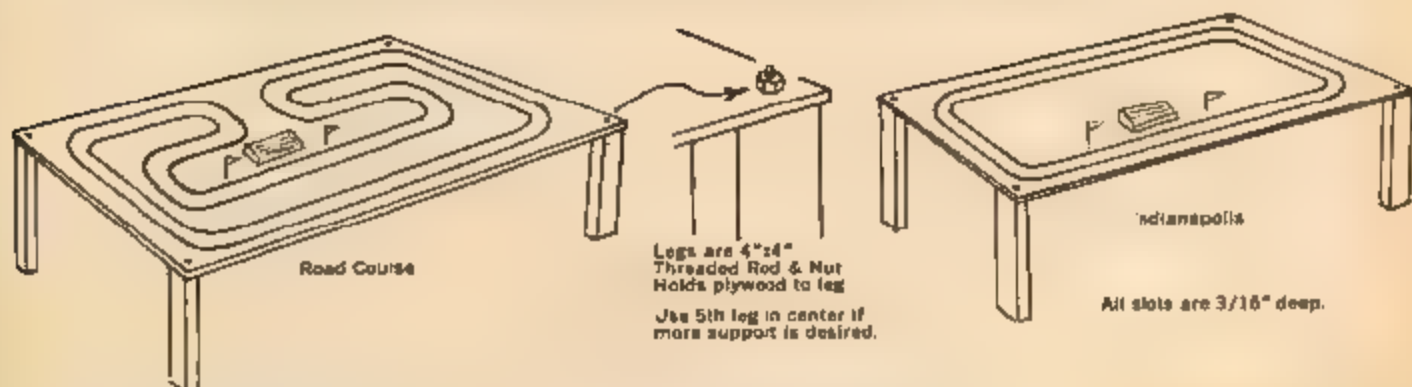
(or larger if you are sending more than one car). Put your car in the center of the box and surround it completely with popcorn. Popcorn is light and provides excellent cushioning against shock. Do not forget to enclose a few spare parts (tires, gears, brushes, etc.) and written instructions for the proxy handler so that he will know how to set up the car for

various conditions. Hints for driving, if the car requires a certain technique, can also be included.

Put your name and address on the box and seal it with adhesive tape. Then wrap it with wrapping paper and tie it securely with string. Write the address on with ink. Show your own name and address plainly, too. Write "Fragile" on all sides of the box and under "Contents" you might write this: "Contents: model electric car. Will be returned to sender. Handle with care." Check with your local postoffice regarding regulations and forms to be filled out. Make sure you indicate that the car will be returned to you in a few days so that duty will not have to be paid.

You will find that sending a model car will be an inexpensive and very rewarding experience. Do not be surprised if the local boys take all the trophies. If you do win however, your victory will be no much more precious since you have won against opposition in their own "back yard." Perhaps a trophy will be enclosed for you when your car is returned after the race.

TWO COURSES FOR THE PRICE OF ONE

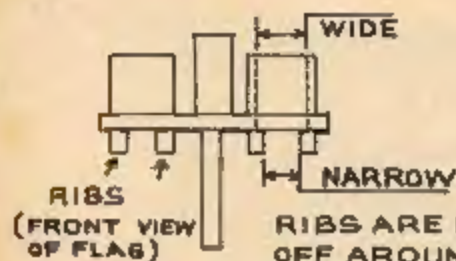


Step 1: Use $\frac{1}{2}$ inch plywood, 4'x8' size, cut your layout by the conventional method.

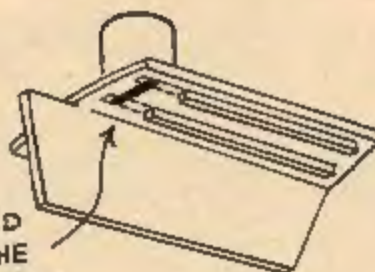
Step 2: Turn plywood over and cut another track.

Result: two courses for the price of one. Change-over time. 2 minutes!

MORE EFFICIENT PICKUPS FOR YOUR STROMBECKER



RIBS ARE FILED OFF AROUND THE SLOTS TO LET WIDE TAPE THROUGH



A wider pickup will increase the efficiency of your car by letting more current pass and by making contact with the track tape even in tight corners.

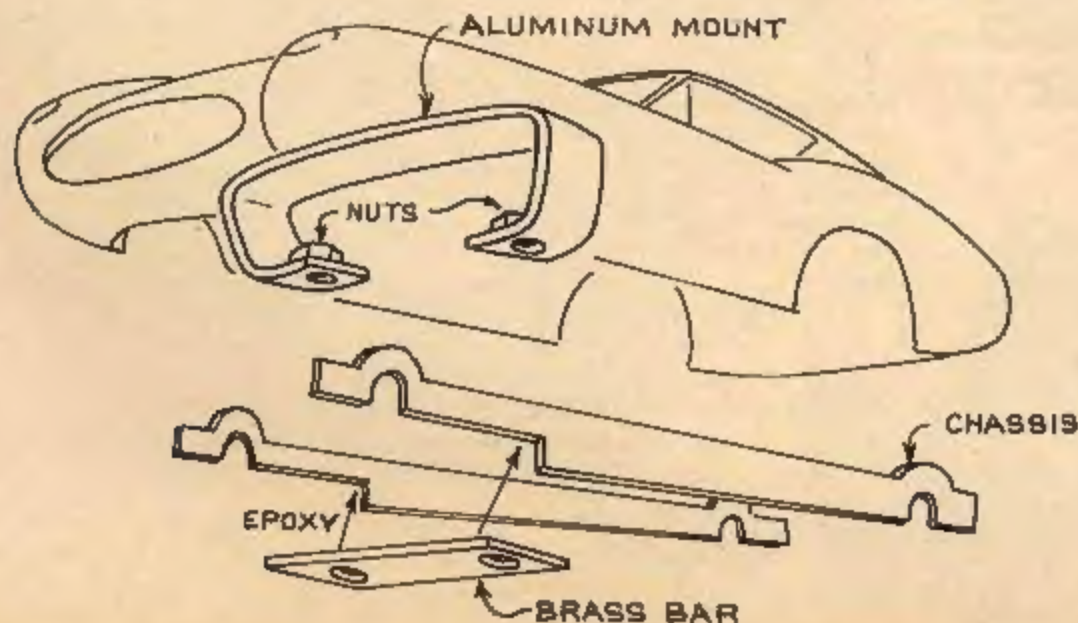
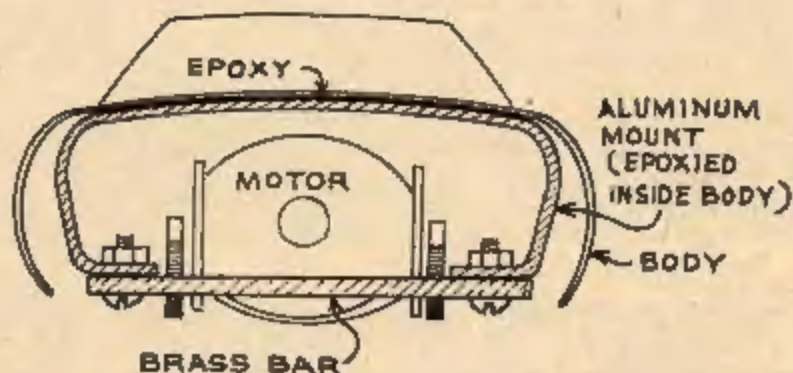
Cut off the unwanted parts of the pickup flag as shown in the sketch. This will allow you to pass a wider braided tape through the slots.

HOW TO MOUNT A BODY ON STROMBECKER CHASSIS

If you want to mount a body on your Strombecker chassis, take a 1/16 thick piece of aluminum (1/2 inch wide) and bend it to the shape shown. Epoxy two nuts inside it.

Drill two holes at the two ends of a brass bar. The spacing of the holes is the same as the holes in the aluminum piece. Epoxy the brass bar under the chassis just ahead of the motor. The body is held on by two screws.

This arrangement makes it quite simple to mount a new body on your favorite chassis. The bent aluminum lends strength to the body. The weight of the brass bar, being close to the center of gravity of the car, serves as weight for balancing and pushing the pickup against the track tape.





Spotlights: **TRACK** of the Month

SLOT HAWKS

Situated between Kansas City and Topeka, in Lawrence, Kansas, the Slot Hawks have been tempted to call their track the "fastest growing track in the United States."

Club president, Herbert L. Williams, 2009 Clare Rd., Lawrence, tells MCS that although their club is but a few months old, they now have more than thirty members. Club objective is 50

members and at the rate they're going, it should be filled shortly.

The Slot Hawk track is 102 feet long with four lanes, and the longest straight runs for 18 feet.



Build Up Your Library of Back Issues!

JUNE, 1963 — The second MCS presents six great full-size rods and tells how to build the models. There are tips on channeling, metal models and step-by-step instructions for a Flat-bodied dragster. There is a survey of motors for electric racers and a big report on slot drag racing.

SEPTEMBER, 1963 — More great cars and custom building tips. Part Two of how to build the MCS X-1 and a big survey of tires and wheels. Full reports on cementing and vacuum forming.

OCTOBER, 1963 — Information packed pages for every model car and slot racing fan. Pictures galore of championship cars. More valuable tips on independent rear suspension and hinging early Ford doors.

NOVEMBER, 1963 — Special coverage on the biggest National model contest winners! New techniques for better picture taking. Detailed report on fiberglass bodies and how to power them.

DECEMBER, 1963 — Buyer's guide to new models and accessories. How to make magnetic doors, drag chutes and short wheelbase roadsters. Differentials for slot racers, driving techniques and power for the '41 Willys.

JANUARY, 1964 — A big issue packed with easy-to-read reports on customizing models. Exclusive instructions on building the MCS X-15 Dragster Slot racers are still talking about tips provided to put new zing in Strombecker cars.

FEBRUARY, 1964 — New ideas on How to Start a Club, Styling, and Painting for Prizes head the list of timeless articles for every model car fan. For the table top buffs, MCS has a detailed report on "O" Gauge



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No 2

TABLE TOP RACING

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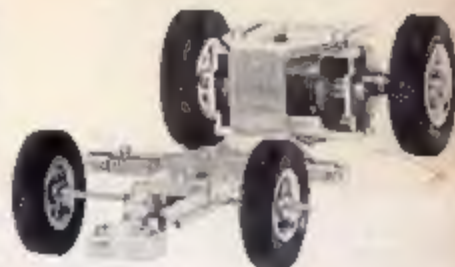


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